# THE AMERICAN JOURNAL of PSYCHIATRY

4 /

VOLUME 116 NUMBER 7 JAN. 1960

Official Journal of THE AMERICAN PSYCHIATRIC ASSOCIATION

### PROVEN EFFECTIVE FOR THE TENSE AND NERVOUS PATIENT

6



There is perhaps no other drug introduced in recent years which has had such a broad spectrum of clinical application as has meprobamate.\* As a tranquilizer, without an autonomic component in its action, and with a minimum of side effects, meprobamate has met a clinical need in anxiety states and many organic diseases with a tension component.\*

Krantz, J. C., Jr.: The restless patient — A psychologic and pharmacologic viewpoint. Current M. Digest 25:68, Feb. 1958.

## Miltown

the original meprobamate, discovered and introduced by WALLACE LABORATORIES, New Brunswick, N. J.



R	REVIEW OF PSYCHIATRIC PROGRESS 1959:	4
	Heredity and Eugenics. Franz J. Kallman	577
	Neurophysiology, Chemistry and Endocrinology. O. R. Langworthy	581/
	Electroencephalography. W. T. Liberson	584
	Clinical Psychology. Frederick Wyatt	588
	Clinical Psychiatry and Psychotherapy. Paul H. Hoch and Nolan D. C. Lewis	590
	Physiological Treatment. Joseph Wortis	595
	Psychosurgery. Walter Freeman	601
	Child Psychiatry; Mental Deficiency. Leon Eisenberg	604-
	Occupational Psychiatry. Ralph T. Collins	
	Social Psychiatry. Fritz C. Redlich and Max P. Pepper	
	Clinical Neurology. William H. Timberlake	
	Alcoholism, Karl M. Bowman	
	Geriatrics. Karl M. Bowman and Bernice Engle	
	Epilepsy. Walter J. Friedlander	
	Psychiatric Social Work. Margaret L. Newcomb	
	Mental Health in Education. W. Carson Ryan	
	Psychiatric Nursing. Mary F. Liston	
	Family Care and Outpatient Psychiatry. Walter E. Barton	
	Forensic Psychiatry. Winfred Overholser	
	Administrative Psychiatry. J. Martin Meyers and Lauren H. Smith	
	Military Psychiatry. Joseph S. Skobba	
	Psychiatric Education. Franklin G. Ebaugh and Robert H. Barnes	
	Rehabilitation and Occupational Therapy. Franklin S. DuBois	
	Renabilitation and Occupational Incrapy, Transin 3, Dubbis	0)/
	COMMENT:	(()
	General Medicine Before Specialization	663
	CORRESPONDENCES:	
	The Presence of Adrenochrome in Blood Dr. Karpman's Book: The Hangover	00.
		000
	News and Notes	667
3	OOK REVIEWS	670
7	N MEMORIAM:	
	Gregory Zilboorg (1891-1959)	671



Ŀ

intensive psychotherapy . . .

and DEXAMYL® to keep depressive symptoms under control

brand of dextro amphetamine and amobarbital



Dexamyl's antidepressant, mood-lifting effect can often help you restore your patient's energy and drive—keep her depressive symptoms under control between psychotherapeutic interviews. In a recent article on the treatment of neurosis, Batten¹ reports, "Myerson observed that a combination of amphetamine derivatives with one of the barbiturates [as in 'Dexamyl'] helps to reestablish an approximately normal emotional state, thus bringing the latent forces... for cure or remission into play."

Caldwell and Nowers<sup>2</sup> state, "The particularly desirable results achieved in depressed, tense, 'nervous' women suggest that, for some patients, ['Dexamyl'] may be more appropriate than the widely used tranquilizers which create an attitude of indifferent calm."

'Dexamyl' is available as tablets, elixir and Spansule® sustained release capsules.

#### Smith Kline & French Laboratories

Batten, C.T.: California Med. 90:202 (March) 1959.
 Caldwell, W.G., and Nowers, W.: California Med. 88:380 (May) 1958.

leaders in psychopharmaceutical research



# THE AMERICAN JOURNAL OF PSYCHIATRY

VOLUME 116

JANUARY 1960

No. 7

#### **EDITOR**

CLARENCE B. FARRAR, M. D., 216 St. Clair Avenue, West, Toronto 7, Ont.

#### **BUSINESS MANAGER**

Austin M. Davies, Ph. B., 1270 Avenue of The Americas, New York 20, New York

#### ASSOCIATE EDITORS

WILLIAM RUSH DUNTON, JR., M. D.

KARL M. BOWMAN, M. D.

Franklin G. Ebaugh, M. D.

WALTER L. TREADWAY, M. D.

STANLEY COBB, M. D.

JOHN C. WHITEHORN, M. D.

S. Spafford Ackerly, M. D.

PAUL H. HOCH, M. D.

LEO KANNER, M. D.

TITUS H. HARRIS, M. D.

LAUREN H. SMITH, M. D.

Francis J. Gerty, M. D.

#### EDITORIAL ASSISTANTS

ANITA GERSHENOVITZ, M. A.

SYLVIA L. LAMBERT, B. A.

#### FORMER EDITORS, 1844-1931

AMARIAH BRIGHAM, M. D., Founder, 1844-1849

T. ROMEYN BECK, M. D.

JOHN P. GRAY, M. D.

G. ALDER BLUMER, M. D.

RICHARD DEWEY, M. D.

HENRY M. HURD, M. D.

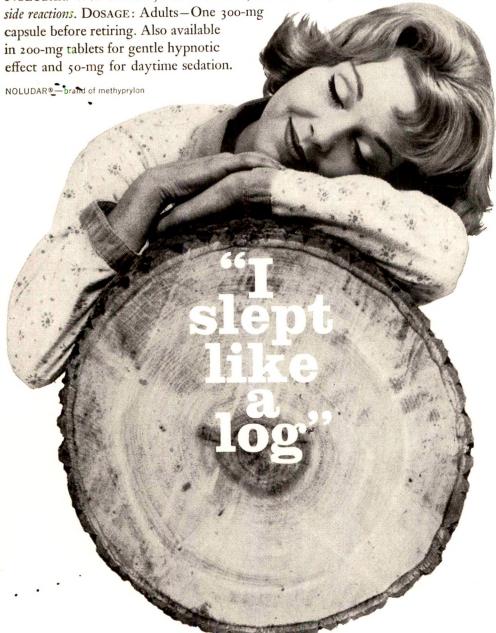
EDWARD N. BRUSH, M. D.

Published by
THE AMERICAN PSYCHIATRIC ASSOCIATION
THE DARTMOUTH PRINTING COMPANY
HANOVER, N. H.

# new Noludar 300

goo mg CAPSULES

A good night's sleep can be described in many ways, but "natural" comes closest to the kind of sound, refreshing sleep your patients will enjoy when you prescribe new NOLUDAR 300. Prompt action ... unsurpassed safety ... 6 to 8 hours of undisturbed rest ... and a cheerful awakening without "hangover"—such is the quality of sleep with NOLUDAR. Well tolerated, non-barbiturate, non-addictive, virtually free of even minor



ROCHE LABORATORIES · Division of Hoffmann-La Roche Inc · Nutley 10, New Jersey

#### THE AMERICAN PSYCHIATRIC ASSOCIATION OFFICERS 1959-1960

President: WILLIAM MALAMUD Vice President: FRANKLIN G. EBAUGH Secretary: C. H. HARDIN BRANCH

President-Elect: ROBERT H. FELIX Vice President: S. SPAFFORD ACKERLY ADDISON M. DJVAL Treasurer:

#### COUNCILLORS

For 3 years FRANCIS J. GERTY PAUL HOCH CALVIN DRAYER ALDWYN STOKES

For 2 years HARRY C. SOLOMON LAWRENCE KOLB, JR. DANA L. FARNSWORTH ROBERT T. MORSE

For 1 year FRANCIS J. BRACELAND PAUL HUSTON GEORGE TARJAN JACQUES GOTTLIEB

#### EXECUTIVE COMMITTEE

ADDISON M. DUVAL WILLIAM MALAMUD FRANCIS J. GERTY ROBERT H. FELIX C. H. HARDIN BRANCH JACQUES GOTTLIEB

Ex-Officio FRANKLIN G. EBAUGH S. SPAFFORD ACKERLY

#### ASSEMBLY OF DISTRICT BRANCHES

ALFRED AUERBACK (Speaker)

JOHN R. SAUNDERS (Speaker Elect)

LESTER SHAPIRO (Recorder)

#### MEDICAL DIRECTOR

MATHEW Ross, 1700-18th Street, N. W., Washington 9, D. C.

#### EXECUTIVE ASSISTANT

AUSTIN M. DAVIES, 1270 Avenue of the Americas, New York 20, New York

#### CHAIRMEN OF COMMITTEES

#### CONSTITUTIONAL COMMITTEES

Arrangements ROBERT GARBER Board of Tellers EVELYN IVEY Membership DICK McCool Nominating LEO BARTEMEIER

#### STANDING COMMITTEES (Internal Activities

of the Association)

Budget JACK R. EWALT Constitution and By-Laws HENRY A. DAVIDSON MESROP TARUMIANZ

House Committee ZIGMOND LEBENSOHN Increasing Responsibilities of the APA

HARVEY J. TOMPKINS Program

JOHN DONNELLY

STANDING COMMITTEES (Technical Aspects)

HARVEY J. TOMPKINS Coordinating Chairman

Aging EWALD W. BUSSE Child Psychiatry J. FRANKLIN ROBINSON

History of Psychiatry I. SANBOURNE BOCKOVEN Medical Education GEORGE C. HAM Mental Deficiency HOWARD BAIR Public Health JAMES V. LOWRY Rehabilitation BENJAMIN SIMON Research MILTON GREENBLATT Theraty HENRIETTE R. KLEIN

STANDING COMMITTEES (Professional Standards) WILFRED BLOOMBERG Coordinating Chairman Psychiatry and the Law

LOUIS GENDREAU Liaison with American Academy ROBERT MATTHEWS

Liaison with American Hospital Association RAYMOND W. WAGGONER

Mental Hospitals JOSEPH E. BARRETT Nomenclature and Statistics

Moses Frohlich Private Practice JOHN COTTON Psychiatric Nursing GRANVILLE JONES

Psychiatric Social Work MAURICE FRIEND Relations with Psychology JOEL S. HANDLER Standards and Policies of Hospitals and Clinics STEWART GINSBERG STANDING COMMITTEES

(Community Aspects of Psychiatry) PAUL LEMKAU

Coordinating Chairman Academic Education C. DOUGLAS DARLING Cooperation with Leisure Time Agencies

ALEXANDER MARTIN Disaster and Civil Defense EDWARD J. KOLLAR Occupational Psychiatry RALPH T. COLLINS International Relations LOTHAR KALINOWSKY National Defense BENJAMIN H. BALSER

Preventive Psychiatry HENRY LAUGHLIN Religion and Psychiatry EARL LOOMIS .

Veterans

JULIUS SOBIN

SPECIAL COMMITTEE Certification of Mental Hospital Administrators WINFRED OVERHOLSER

# Cogentin® METHANESULFONATE (Benztropine Methanesulfonate)

#### in all forms of parkinsonism

• a single bedtime dose permits restful sleep... • prevents morning rigidity... • "is often sufficient to control symptoms for 24 hours"

COGENTIN "will counteract rigidity, contractures, frozen states and muscle cramps better than any current preparation" without drowsiness or fogginess, and even control major tremors unrelieved by other medications. Cogentin usually permits continuation of full-strength tranquilizer therapy if parkinsonian symptoms develop. And Cogentin has not shown cumulative toxicity. No serious reactions have been reported even after treatment lasting as long as four years.

References: 1. Doshay, L. J.; Constable, K., and Zier, A.: Neurology 3:360, 1953. 2. A.M.A. Council on Drugs: New and Nenofficial Drugs, Philadelphia, J. B. Lippincott, p. 242, 1958. 3. Brock, S., Mod.: Bull. New York Acad. Med. 32:202, 1956. 4. Doshay, L. J.: Parkinsonism and Its Treatment, Philadelphia, J. B. Lippincott, pp. 87-88, 1954. 5. Doshay, L. J.: J.A.M.A. 162:1031, 1956.

Dosage and Administration: Recommended dosage is one-half to one tablet two or three times a day. If higher doses are required, the patient should be closely observed and dosage adjusted as indicated. A decrease in dosage is rarely necessary. Additional information on Cogentin is available to physicians on request.

Supplied: As a 2 mg, quarterscored tablet in bottles of 100 and 1000.

COGENTIN is a trademark of Merck & Co., Inc.

Merck Sharp & Dohme division of MERCK & CO., Inc., PHILADELPHIA 1, PA.



#### AMERICAN JOURNAL OF PSYCHIATR

#### INFORMATION FOR CONTRIBUTORS

Manuscripts—The *original* manuscripts of papers read at the annual meetings of the Association should be deposited with the Secretary during the meetings, or sent to the New York office promptly afterward. Do not deposit carbon copies.

Papers read at the annual meetings become the property of the Association. Not all papers read, however, can be published in the JOURNAL, and authors wishing to publish in other vehicles will first secure from the Editor the release of their manuscripts.

Papers will not be accepted for the annual program if they have been previously read at other meetings or if they have been already published.

Papers contributed during the year (not on the annual program) should be sent to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

- Style—Manuscripts should be typewritten, double spaced, on one side of the paper. They must be prepared in conformity with the general style of The American Journal of Psychiatry. Retain a carbon copy of manuscript and duplicates of tables, figures, etc., for use should the originals be lost in the mails.
- Multiple Authorship—The number of names listed as authors should be kept to a minimum, others collaborating being shown in a footnote.
- Illustrations—Authors will be asked to meet printer's costs of reproducing illustrative material. Copy for illustrations cannot be accepted unless properly prepared for reproductions. Wherever possible, drawings and charts should be made with India ink for photographic reproduction as zinc etchings. Photographs for halftone reproduction should be glossy prints. Illustrations should be as small as possible without sacrificing important detail. Redrawing or preparing illustrations to make them suitable for photographic reproduction will be charged to author.
- Authors' Corrections in Proofs—Corrections, additions or deletions made by authors are to be charged to them. These alterations are charged on a time basis at the rate of \$7.00 per hour. Proper editing of original manuscript is important to avoid the expense of correction.
- Tables—Tables should be typed on separate sheets. Tables are much more expensive to set than text material and should be used only where necessary to clarify important points. Authors will be asked to defray cost of excessive tabular material.
- References—References should be assembled according to author in a terminal bibliography, referred to in text by numbers in parentheses. Bibliographical material should be typed in accordance with the following style for journals and books respectively:
  - 1. Vander Veer, A. H., and Reese, H. H.: Am. J. Psychiat., 95: 271, Sept. 1938.
  - 2. Hess, W. R.: Diencephalon. New York: Grune & Stratton, 1954.

Abbreviations should conform to the style used in the Quarterly Cumulative Index Medicus.

The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

Articles appearing in this Journal do not necessarily reflect the official attitude of The American Psychiatric Association or of the Editorial Board.

The subscription rates are \$12.00 to the volume: Canadian subscriptions \$12.50; foreign subscriptions, \$13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate students in psychology, psychiatric social work, and psychiatric nursing, \$5.00 (Canada \$5.50). Single issues, \$1.25. Copyright 1959 by The American Psychiatric Association.

Office of Publication, 10 Allen St., P.O. Box 832, Hanover, N. H.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 10 Allen St., P.O. Box 832, Hanover, N. H., or to 1270 Avenue of the Americas, New York 20, N. Y.

Editorial communications, books for review, and exchanges should be addressed to the Editor. Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

Second class postage paid at Hanover, New Hampshire.

# INSOMNIA NEEDS MORE THAN A HYPNOTIC INSOMNIA NEEDS MORE THAN A TRANQUILIZER HYSOMNIA NEEDS HYPTRAN

**DUAL-RELEASE HYPNOTIC TRANQUILIZER** 

for tension-free sleep all through the night



Sleep comes quick, sure and sound, with new Hyptran. The outer layer contains an immediate calming dosage of phenyltoloxamine, a mild, certain non-phenothiazine tranquilizer to sup-

port short-acting secobarbital. This fast-acting, quickly metabolized barbiturate acts directly on the higher
cerebral levels and
quickly brings needed
sleep. Hyptran's inner
\_\_\_ core of phenyltoloxa-

mine, released later in the night, controls insomnia-causing anxieties, keeps them from "breaking through" and interrupting sleep.

Patients awake calm and clear-headed, fully refreshed mentally and physically.



DOSAGE: 1-2 tablets before retiring.

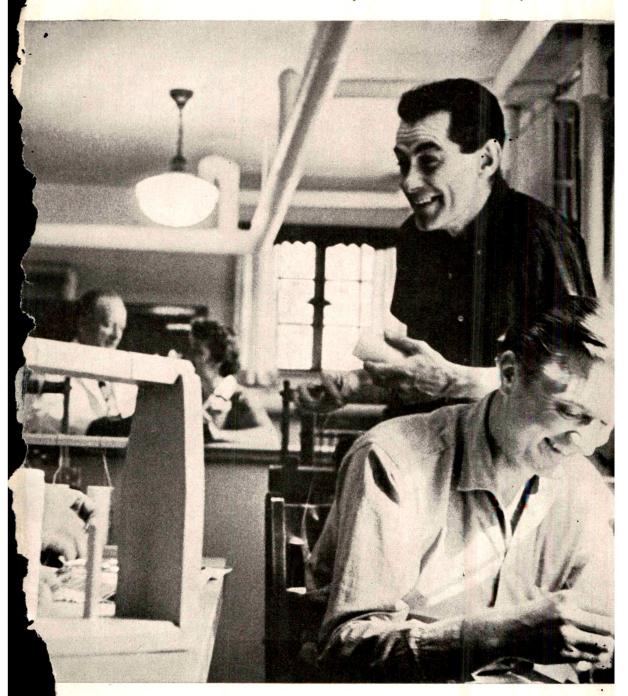
SUPPLIED: Bottles of 10'

REFERENCES: Batterman, R. C., et al.: New York J. Med. 58:3821, 1958./Harrison, T. R.: Principles of Internal Medicine, ed. 3, York, McGraw-Hill, 1958, p. 1764./DiMascio, A., et al.: Am. J. Psychiat. 115:301, 1958./Sainz, A.: Proc. Mohawk Valley Psychiatric As. June 17, 1957./Fleischmajer, R., et al.: Antib. Med. & Clin. Therap. 5:120, 1958./Hoekstra, J. B., et al.: J. Am. Pharm. A. 42:587, 195 Cronk, G. H., and Naumann, D. E.: New York J. Med. 55:1465, 1955./Paper in preparation: Data on 500 clinical cases. (Available on requesting the content of the con

WAMPOLE LABORATORIES, STAMFORD, CON.

toward a new beginning...

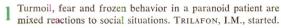
meaningful "give and take" experience within the hospital community



for a psychiatric case report with a happy ending, turn the page...

### toward the "give and take" · recovery goal







Beginning of responsiveness, trust in therapist. 2 Suspicion diminished, responsiveness improving.

4 Consistently considerate treatment from hospital personnel supports the emerging sense of values and purpose.

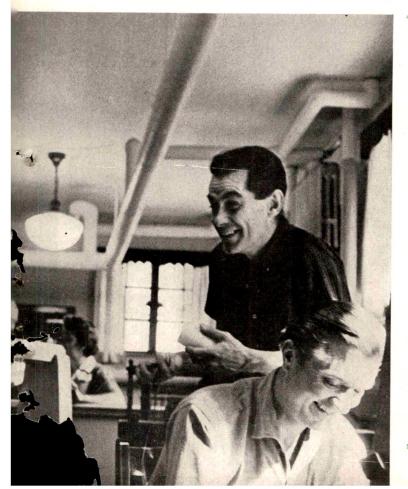






A clear turning point, and a quiet clear frame of mind. TRILAFON continued orally, 12 mg. q.i.d.

Six months later, staff notes a major "profile" change as the patient "holds his own" successfully in the daily interrelationships of the hospital community.



facilitates social improvement... the initial goal of therapy in mental patients

# Trilafon<sup>®</sup>

Dosage: Depending on the severity of the condition and response of the individual case, the dosage is 8 to 16 mg. two to four times daily. Consult Schering literature for other indications, as well as for details on dosage and administration, precautions and contraindications.

Packaging: Tablets – 2 mg., 4 mg. and 8 mg., bottles of 50 and 500; 16 mg., bottle of 500. REPETABS – 4 mg. in the outer layer and 4 mg. in the timed-action inner core, bottles of 30 and 100. TRILAFON Injection – 5 mg., ampul of 1 cc., boxes of 6 and 100; 10 cc. vial, 5 mg./cc., boxes of 1 and 10. TRILAFON Concentrate—16 mg./5 cc., bottle of 4 oz., with graduated dropper. TRILAFON Suppositories – 4 mg. and 8 mg., boxes of 6. TRILAFON Syrup—2 mg./5 cc., 4 oz. bottle.

TRILAFON,® brand of perpherazine. REPETABS,® Repeat Action Tablets.

SCHERING CORPORATION . BLOOMFIELD, NEW JEES

·...the

patients¹
became
easily
manageable"

...side
effects¹
were
gratifyingly
low
in
incidence"

# Dartal

dihydrochloride

brand of thiopropazate dihydrochloride

In chronic schizophrenia<sup>1</sup> the normalizing influence of Dartal became evident by a return to a quiet and normally active behavior, reduced aggressiveness and tension, lessened anxiety and delusions, and better subjective feeling in 81.5 per cent of a series of fifty-four patients.

All in this group had been refractory to shock therapy, hydrotherapy and ataraxic drugs, and seven had undergone psychosurgery.

Dartal was preferred by the patients to other methods of therapy because side actions were infrequent (occurring in 4 per cent); all side effects were readily reversible.

In another study<sup>2</sup> the drug was found particularly useful in patients with association defect, depersonalization and anxiety, while patients with mood depression did not respond.

The usual dose is one 10-mg. tablet, one to three times daily; individual dosage adjustment is, however, especially important.

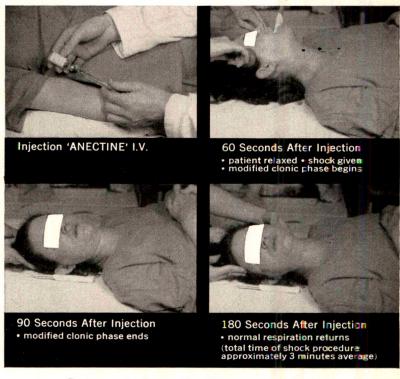
- 1. Ferrand, P. T.: Minnesota Med. 41:853 (Dec.) 1958.
- 2. Edisen, C. B., and Samuels, A. S.: A.M.A. Arch. Neurol. & Psychiat. 80:481 (Oct.) 1958.

SFARIE

# SAFER ELECTROSHOCK THERAPY

ultra-short-acting skeletal muscle relaxant

relaxant ANECTINE brand



rapid relaxation rapid recovery

#### Comments from the literature:

"... method of choice."

Havens, L. L.: Dis. Nerv. System 19:1 (Jan.) 1958.

"... recommend its use."

Impastato, D. J., and Gabriel, A. R.: Am. J. Psychiat. 114:698 (Feb.) 1958.

"... treatment of choice."

Michael, K. D., and Wunderman, D. C.: J. New. & Ment. Dis. 126:535 (June) 1958.

"... irrespective of age."

Robie, T. R.: J. M. Soc. New Jerse, 52:82 (Feb.) 1955.

Complete literature available upon request.

'Anectine'<sup>®</sup> brand Succinylcholine Chloride Injection: 20 mg. in each cc., multi-dose vials of 10 cc.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

### Stelazine<sup>®</sup>

brand of trifluoperazine

#### to help you reach the chronic psychotic

Because of its clinically demonstrated effectiveness in the treatment of chronic psychotics, 'Stelazine' therapy should be tried for such patients, no matter how discouraging the results of previous therapies may have been.

#### an awakening effect

Allen¹ reports that 'Stelazine' had an awakening effect on chronic patients "who had previously been lacking ambition, initiative, or interest in their surroundings."

#### delusional and hallucinatory trends alleviated

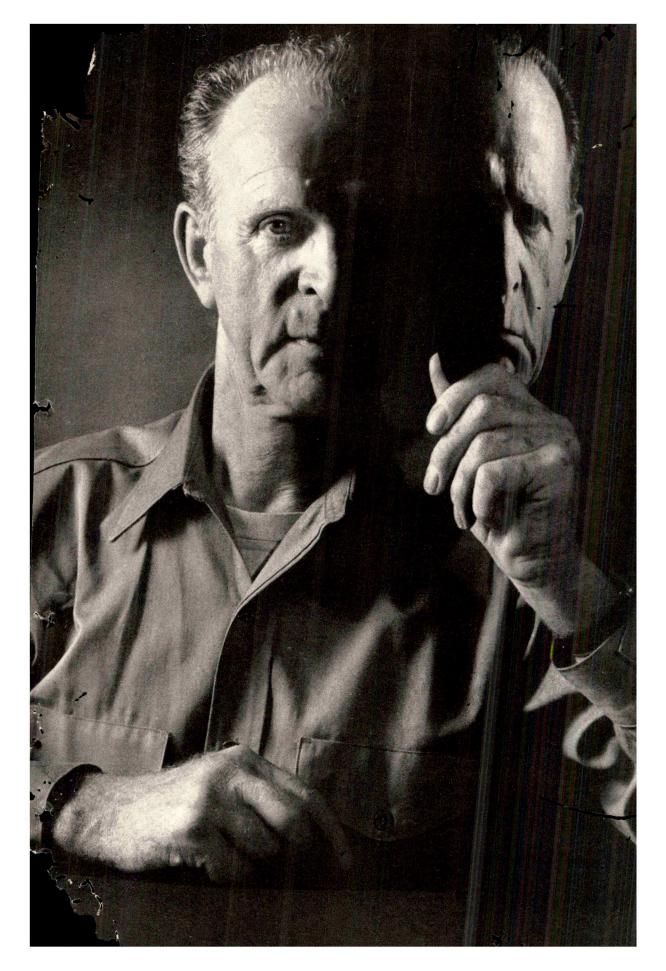
'Stelazine' also "alleviated delusional and hallucinatory trends and facilitated communication and psychotherapy.... To appreciate the significance of this progress, it must be remembered that these patients had spent years on closed wards, beyond the reach of any available form of therapy."

1. Allen, V. S.: Trifluoperazine in the Treatment of Drug-Resistant Schizophrenics, J. Clin. & Exper. Psychopath. 20:247 (Sept.) 1959.



leaders in psychopharmaceutical research







#### **ULTRAN**® helps you to restore assurance

In a wide range of diseases which are primarily organic, apprehension, anxiety, and tension may obstruct recovery. In such cases, adjunctive therapy with Ultran as an aid to your reassurance will often equip the patient better for a smooth return to normal living.

Ultran (1) allays apprehension and anxiety, (2) relieves neuromuscular tension, and (3) enhances the effectiveness of analgesic therapy. It is well tolerated, notably safe, and chemically unique.

Supplied in Pulvules<sup>®</sup> of 300 mg. (usually 1 t.i.d.) and scored tablets of 200 mg. (usually 1 q.i.d.).

LULian® (phenaglycodol, Lilly)

ELI LILLY AND COMPANY . INDIANAPOLIS 6, INDIANA, U.S.A.

974002

the

#### REVIEW OF PSYCHIATRIC PROGRESS 1959

#### HEREDITY AND EUGENICS

FRANZ J. KALLMANN, M.D.<sup>1</sup>

Improved techniques for cultivating human cells and the newly achieved accuracy in identifying each of the 46 chromosomes in the normal diploid chromosome complement of man(13, 18, 19, 46, 58, 71, 72) opened a long-sought gateway to penetrating advances in medical (psychiatric) genetics during the past year. With the discovery of distinct chromosomal irregularities in a number of severe pathological conditions such as mongolism, congenital malformations and various disturbances in sexual development, a handful of diligent cytogeneticists began to reduce the long list of psychiatric disorders of hitherto unclear etiology. At the same time, muchneeded explanations were furnished not only for earlier genetic hypotheses based on comparative twin and sibship data, but also for the results of diagnostically valuable sex-chromatin tests differentiating between the cells of chromatin-positive and chromatin-negative individuals (4, 26, 44, 52). The methodological principles and conceptual implications of both types of procedure were expertly reviewed in a great variety of symposia and publications dealing with the intricate technical problems of behavioral and population genetics (5, 9, 14, 25, 32, 38, 39, 41, 51, 61, 65, 66, 67, 68, 69, 70, 75).

The exact nature of the disarranged chromosome configuration in mongolism, resulting from non-disjunction of chromosome 21 and conclusively anticipated by serial twin studies, was identified in France by Lejeune et al. (46, 47, 69) and immediately confirmed in England by Ford, Jacobs and others (35, 66), in Sweden by Böök et al. (8), and in the United States by Puck's research group (66, 70). Mongoloid patients

were thereby classified as carriers of 47 chromosomes with a triple chromosome system (two chromosomes 21 from one parent and only one from the etter). The unique opportunities offered by this primary trisomic condition for quantitative biochemical studies of the products of genes located on the given chromosome were recognized everywhere.

Equally promising approaches to the construction of a human chromo:ome map were uncovered by the identification of irregular sex chromosome complements in chromatin-negative females with crarian dysgenesis (Turner's syndrome characterized by an XO sex chromosome formula and a total of 45 chromosomes due to the loss of a Y chromosome), in chromatin-positive males with testicular dysgenesis, sunuchoid symptoms and an XXY sex chromosome formula (Klinefelter's syndromes with a total complement of 47 chromosomes, and in a sexually underdeveloped superfemale with three X chromosomes (21, 22, 36, 37, 64, 70). Hence, the Y chromosome in man proved to be male-determining, while a complement of 48 chromosomer, with an extra X chromosome and an extra coromosome 21, was found to produce the clinical features of both mongolism and Kt-nefelter's syndrome (20). Another unusual case of disarranged chromosome structure (45 chromosomes with translocation of autosomal fragments) was observed in a mentally defective boy with delayed raysical development and multiple bony deformities of the vertebral column (73).

In line with the theory that grees defects in the larger chromosomes would probably be lethal, it was to be expected that the search for quantitative chromosomal disarrangements would be futile in such conditions as schizophrenia or Wilson's dis-

<sup>1 722</sup> West 168th Street, New York 32, N. Y.

ease assumed to be due to the effect of major mutant gener rather than to non-disjunction or translocation of entire chromosomes. Other reported "negatives" included Apert's and Marfan's syndromes, anencephaly, and chondrodystrophy (70).

An important contribution to the understanding of the role played by DNA (deoxyribonucleic acid, the ever-present principal component of chromosomal material) in disordered nuclear activity (synthesis of proteins and nucleic acids) was the observation by Allfrey and Mirsky (1, 70) that the phosphoric acid groups dotting the surface of DNA molecules carry negative electrical charges. Following removal of DNA from isolated nuclei, neither protein nor nucleic acid was synthesized, and replacement by electrically neutral or positive molecules failed to reactivate the nuclear chemistry. However, a depleted nucleus was seen to return to normal function when its original DNA content was restored or when it was replaced by another large electrically negative molecule.

The newly accentuated need for adequate books on medical genetics, embodying recent advances in biochemical and cytological genetics, was met by a growing output of specialized textbooks. The biochemical deficiencies detectable as concomitants of mutant gene changes through some faulty link in protein synthesis were competently dealt with in the books of Anfinsen(2), Butler(11), Hsia(31), Lamy et al.(45) and Zamenhof(76), and in special chapters and research reports by Abood, Celler and Hoffer (24), Childs (12), Corey and Horowitz(33), Gutman(27), Kety(42), Mautner(48), Racker(53) and Rhoads (55). Some of the long established textbooks appeared in considerably revised editions, including those of Roberts (56), Sinnott et al. (60) and von Verschuer (74).

Problems of cytodifferentiation were explored by Hayashi(30) and the contributors to a conference report edited by Rudnik(59), while recent discoveries in the genetic analysis of homograft incompatibility were reviewed by Billingham(7), Brent (10), Medawar (49) and others. Of the multiple histocompatibility genes (15 or more) determining the antigenic substances responsible for eliciting homograft reactions,

the one occupying the so-called H-2 locus seemed to be particularly important. So, of the 10 alleles situated at this locus we shown to produce "transplantation antigens so powerful that hosts which differ from their donors simply at this one locus—that is, with respect to a single antigen—may destroy a homograft within less than two weeks" (7). The evolutionary aspects of human behavior and population structure were reevaluated by Dunn(16), Fischer (17), Roe and Simpson(57) and Sheppard (62).

In the clinical and demographic areas of psychiatric genetics, 4 well-documented research reports were added to the Scandinavian series of monographs; namely, those by Arentsen and Strömgren(3) on a nationwide cross-section investigation of Danish mental hospital patients, with detailed prevalence, morbidity and disease expectancy rates for the various forms of mental illness; by Hallgren(28) on 177 Swedish cases of retinitis pigmentosa combined with congenital deafness; by Kjer(43) on 19 Danish families with 249 cases of infantile optic atrophy which seemed to follow the dominant mode of inheritance; and by Stenstedt(63) on a study of the parents and siblings of 307 patients diagnosed as involutional melancholia "according Henderson-Gillespie's usage of the term." In Hallgren's survey it was noted that nearly one-half of the affected individuals were either mentally retarded or psychotic, with the majority of the latter showing "a schizophrenia-like symptom picture." The frequency of psychiatric or neurological disorders among their parents and siblings was not found to be higher than that in the general population, but that of matings between first cousins among the parents approximated a rate of 17%.

Stenstedt's data on the genetic aspects of "endogenous affective disorders in later-life" were based on patients who had "pure depressions without conspicuous paranoid symptoms." The study yielded an increased morbidity risk figure of 6.1% for the parents and sibs of the index cases, and no evidence for "a genetic connection with any other mental diseases." However, the investigator used the classification of schizophrenia "in a fairly narrow sense," while he subdivided

affective disorders of the involutional jog iod into psychogenic depression, manicbressive psychosis and involutional melcholia, combining the two latter categores under the label "endogenous affective disorders." By defining involutional melancholia as "a kind of endogenous depression in later life," the analysis served to confirm a technical peculiarity that had become apparent in previous family studies of this etiologically heterogeneous type of psychosis; namely, the fact that the psychiatric features of the personal histories and family backgrounds to be analyzed tend to depend on the system of clinical classifications used. This technicality was stressed in several comprehensive reports which dealt with classificatory concepts of psychiatric genetics (6, 15, 40, 54).

The long list of other pertinent contributions to the understanding of genetic and eugenic population problems included several books and symposia concerned with the biological, social and psychiatric aspects of fertility, family planning, and control of population growth (23, 29, 34, 50, 67). One of the most interesting findings in the study of Freeman et al. (23) on the attitudes of 2,713 white, married women aged 18 to 39 in 1955 was that the majority of couples in this group had a fairly specific idea of how many children they wanted. They used contraceptives to space their children and to prevent conception when they had the desired number, and they were reasonably successful in limiting the number of children, but not always in spacing them according to their plans.

\*

The importance of cytogenetics in current research programs was reflected by the fact that the 1959 Nobel Prize in physiology and medicine was awarded to two American biochemists, Severo Ochoa and Arthur Kornberg, for discoveries related to the synthesis of ribonucleic acid (RNA) and deoxyribonucleic acid (DNA), the two key chemicals in the reproduction of hereditary qualities. While Ochoa found a bacterial enzyme capable of synthesizing RNA in the test tube, Kornberg's contribution was the discovery of an enzyme promoting DNA production from smaller molecules.

The 1959 Thornton Wilson Prize in preventive and genetic psychiatry was shared by Lauretta Bender and Alfred Mirsky (70).

Altogether, 1959 was a very productive year for medical genetics, and held gloving promises for the future.

#### BIBLIOGRAPHY

- 1. Allfrey, V. G., and Mirsky, A. E.: Proc. Nat. Acad. Sci., 4: 981, 1958; also Trans. N. Y. Acad. Sci., 21: 3, 1958.
- 2. Anfinsen, C. B.: The Molecular Basis of Evolution. New York: Wiley, 1959.
- 3. Arentsen, K., and Strömgren, E. Patients in Danish Psychiatric Hospitals. Capenhagen: Munksgaard, 1959.
  - 4. Barr, M. L.: Science, 130: 379, 1959.
- 5. Beadle, G. W.: Science, 129: 1715, 1959.
- 6. Bender, L.: Am. J. Ment. Def., 64: 81, 1959.
- 7. Billingham, R. E.: Science, 130: 947, 1959.
- 8. Böök, J. A., et al.: Acta Paediat . 48: 453, 1959.
- 9. Bowers, J. Z. (ed.): A Symposium on Genetics in Medical Research. J. Med. Ed., Vol. 34, 1959; also Am. J. Hum. Genet., 11: 289 (Suppl.), 1959.
- 10. Brent, L.: Tissue Transplantation Immunity. In: Progress in Allergy. Basel: Karger, 1958.
- 11. Butler, J. A. V.: Inside the Living Cell. New York: Basic Books, 1959.
- 12. Childs, B.: Bull. N. Y. Acad. Med., 35: 77, 1959.
- 13. Chu, E. H. Y., and Giles, N. H : Am. J. Hum. Genet., 11: 63, 1959.
- 14. Cold Spring Harbor Symposia on Quantitative Biology. Vol. 23, 1958.
- 15. Cowie, V., and Slater, E.: Psy-hiatric Genetics. In: Recent Progress ir. Psy-hiatry, G. Fleming, and A. Walk (eds.), 1: 1. New York: Grove Press, 1959.
- 16. Dunn, L. C.: Heredity and E-olution in Human Populations. Campridge: Harvard Univ. Press, 1959.
- 17. Fisher, R. A.: The Genetical Theory of Natural Selection. New York: Dover Publications, 1959.
- 18. Ford, C. E., and Hamerton, J. L.: Nature, 178: 1020, 1956; also Stair. Techn., 31: 247, 1956.
- Ford, C. E., Jacobs, P. A., and Lajtha,
   L. G.: Nature, 181: 1565, 1953
- 20. Ford, C. E., Jones, et al.: Laices, 1709, 1959.
- 21. Ford, C. E., Polani, et al.: Nature, 183: 1030, 1959.
- 22. Fraccaro, M., et al.: Lancet, 1: 886, 1959.

- 23. Freedman, R., Whelpton, P. K., and Campbell, A. A.: Femily Planning, Sterility, and Population Growth. New York: McGraw-Hill, 1959.
- 24: Gibbs, F. A. (ed.): Molecules and Mental Health. Philadelphia: Lippincott, 1959.
- 25. Goodman, H. O., and Herndon, C. N. : Internat. Rec. Med., 172 : 61, 1959.
- 26. Grumbach, M. M., and Barr, M. L.: Rec. Prog. Hormone Res., 14: 255, 1958.
- 27. Gutman, A. B.: Bull. N. Y. Acad. Med., 35: 419, 1959.
- 28. Hallgren, B.: Retinitis Pigmentosa Combined with Congenital Deafness. Copenhagen: Munksgaard, 1959.
- 29. Hammons, H. G. (ed.): Heredity Counseling. New York: Hoeber-Harper, 1959.
- 30. Hayashi, T.: Subcellular Particles. New York: Ronald Press, 1959.
- 31. Hsia, D. Y.: Inborn Errors of Metabolism. Chicago: Year Book Publishers, 1959.
- 32. Husén, T.: Psychological Twin Research. Stockhalm: Almqvist & Wiksell, 1959.
- 33. Hutchings, E.: Frontiers in Science. New York: Basic Books, 1958.
- 34. Huxley, A.: Brave New World Revisited. London: Chatto and Windus, 1959.
- 35. Jacobs, P. A., et al.: Lancet, 1: 710, 1959.
- 36. Jacobs, F. A., et al.: Lancet, 2: 423, 1959.
- 37. Jacobs, P. A., and Strong, J. A.: Nature, 183: 302, 1959.
- 38. Juel-Nielsen, N., et al.: Acta genet., 8: 256, 1958.
- 39. Kallmann F. J.: Psychogenetic Studies of Twins. In: Psychology: A Study of a Science, Vol. 3, S. Koch (ed.). New York: McGraw-Hill, 1959.
- 40. Kallmann, F. J.: The Genetics of Mental Illness. In: American Handbook of Psychiatry, S. Arieti (ed.). New York: Basic Books, 1959.
- · 41. Kallmann, F. J., and Rainer, J. D.: Genetics and Demography. In: The Study of Population, P. M. Hauser and O. D. Duncan (eds.). Chicago: Univ. of Chicago Press, 1959.
- 42. Kety, S. S.: Science, 129: 1528 and 129: 1590, 1959.
- 43. Kjer, P.: Infantile Optic Atrophy with Dominant Mode of Inheritance. Copenhagen: Munksgaard 1959.
- 44. Rosenow, W.: A. Ge. Me. Ge., 8: 123, 1959.
- 45. Lamy, M., Royer, P., and Frézal, J.: Maladies Héréditaires du Métabolisme Chez L'enfant. Paris: Masson, 1959.
  - 46. Lejeune, J, Gautier, M., and Turpin,

- R.: C. R. Acad. Sci., 248: 602 and 2 1721, 1959.
- 47. Lejeune, J., Turpin, R., and Gaut M.: Ann. de Génétique, 1: 41, 1959.
- 48. Mautner, H.: Mental Retardation. New York: Pergamon Press, 1959.
- 49. Medawar, P. B.: The Croonian lecture: The homograft reaction. Proc. Roy. Soc., 13: 149, 1958.
- 50. Milbank Memorial Fund: Thirty Years of Research in Human Fertility. New York: Milbank Memorial Fund, 1959.
- 51. Muller, H. J.: Persp. Biol. and Med., 3: 1, 1959.
- 52. Nelson, W. O.: Trans. N. Y. Acad. Sci., 20: 493, 1958.
  - 53. Racker, E.: Am. Nat., 93: 237, 1959.
- 54. Rainer, J. D.: Monogr. Suppl. Dis. Nerv. Syst., 20: 42, 1959.
- 55. Rhoads, C. P.: Persp. Biol. and Med., 2: 318, 1959.
- 56. Roberts, J. A. F.: An Introduction to Medical Genetics. London: Oxford Univ. Press, 1959.
- 57. Roe, A., and Simpson, G. G.: Behavior and Evolution. New York: Basic Books, 1959.
- 58. Rothfels, K. H., and Siminovitch, L.: Stain Techn., 33: 73, 1958.
- Rudnick, D. (ed.): Cytodifferentiation.
   Chicago: Univ. of Chicago Press, 1958.
- 60. Sinnott, E. W., Dunn, L. C., and Dobzhansky, T.: Principles of Genetics (5th ed.), New York: McGraw-Hill, 1958.
  - 61. Snyder, L. H.: Science, 129: 7, 1959.
- 62. Sheppard, P. M.: Natural Selection and Heredity. New York: Philosophical Darary, 1959.
- 63. Stenstedt, A.: Involutional Melancholia. Copenhagen: Munksgaard, 1959.
  - 64. Stern, C.: Nature, 183: 1452, 1959.
- 65. Stern, C.: Proc. Am. Philosoph. Soc., 103: 183, 1959; also J. Med. Educ., 34: 301, 1959.
- 66. Symp. on Cytology in Human Genetics. Am. Inst. Biol. Sci., Univ. Park, 1959.
- 67 Symp. on Differentiation in Current Mating and Fertility Trends. Eugen. Quart., 6:65, 1959.
- 68. Symp. on Epidemiology of Mental Disorders. Am. Psychopath. Assoc., New York, 1959.
- 69. Symp. on Mental Retardation. Assoc. Res. Nerv. Ment. Dis., New York, 1959.
- 70. Symp. on The Genetics of Disordered Behavior. East. Psychiat. Res. Assoc., New York, 1959.
- 71. Tjio, J. H., and Levan, A.: Hereditas, 42: 1, 1956.

2. Tjio, J. H., and Puck, T. T.: J. exp. M., 108: 259, 1958; also Proc. Nat. Acad. Sci., 44: 1229, 1958.

73. Turpin, R., et al.: C. R. Acad. Sci., 248: 3636, 1959.

74. von Verschuer, O.: Genetik des Men-

schen. München-Berlin : Urban & Schwarzenberg, 1959.

75. Wright, S.: Science, 130: 959, 1559; also Persp. Biol. and Med., 3: 107, 1959.

76. Zamenhof, S.: The Chemistry of Heredity. Springfield: Thomas, 1959.

#### NEUROPHYSIOLOGY, CHEMISTRY AND ENDOCRINOLOGY

#### ORTHELLO R. LANGWORTHY 1

Advancing concepts in neurophysiology (1, 2) usually discussed under the heading of the non specific or reticular complex merit review, particularly in relation to possible application to psychiatry. The reticular or non specific system is better defined on a physiologic than on an anatomic basis. Magoun calls it a central transactional core between the strictly sensory and motor systems of classical neurology. It can be considered anatomically as similar to the diffuse and infinitely complex fiber systems which characterize the brains of lower vertebrates as Herrick described than in amphibia. These relationships have been further elaborated in phylogenetic development. There are many groups of cells in the brain stem and particularly in the midbrain which relate to this complex. These neurons receive collateral branches from the ascending sensory tracts, especially the spinothalamic and spinocerebellar. The proprioceptive or medial lemniscus system gives few collaterals to these cells. On the other hand, the trigeminal sensory nuclei contribute heavily to the sensory inflow. Central areas of the midbrain tegmentum constitute a major tremination point for ascending reticular pathways (Nauta and Kuypers). At the caudal border of the thalamus the non specific pathway bifurcates, the ventral portion continuing into the subthalamic region and the dorsal turning into the intralaminar cell groups of the thalamus. An extensive midbrain region projects to the hypothalamus, the preoptic area and the medial septal nucleus.

Sheibel and Sheibel illustrated that the activity of a single reticular cell may be

<sup>1</sup> The Johns Hopkins Hospital, Henry Phipps Psychiatric Clinic, Baltimore 5, Md.

influenced by stimuli from all the extremities, smell, sound, vagus nerve erebellum and cerebral cortex. The reticular cells appear to integrate a number of sensory inputs rather than maintain specificity. These authors studied the structure of the cells. Their axons are of enormous complexity, and branch in cranial and caudal directions. They give off numerous collaterals along their entire course including terminations in the sensory nuclei of the cranial nerves. The thalamic reticular formation appears as a sheet-like continuation of the mesencephalic tegmentum, hugging the internal aspect of the internal capsule. Its structure makes the possibility that it has a filtering function not unlikely. The midline nuclei of the thalamus give rise to axons which influence the activity of the cerebral cortex. The hippocampus and amygdala as well as the neocortex inflience reticular activity just as they are influenced

It is established that influences from the brain stem reticular system extend caudad to control sensory activity and patterns of tone. Also, influences extending unward from the midbrain are capable of arousing or awakening the animal and changing the brain wave pattern from a sleeping to a waking one. If the brain stem is transected at the upper midbrain level the enimal never awakes. Now evidence is accumulating that the diencephalic portion of the reticular system filters out unimportant stimuli and may thus direct attention. Sharpless showed that a selected musical tone will arouse a sleeping animal and produce significant changes of orain wave pattern. However, repetition of this tone will cause this response to disappear. Widespread cortical ablation including much

more than the auditory areas of both hemispheres will not prevent the cat from learning not to awaken to a repeated tone, while awaking promptly to a novel one (Jasper). The function of the reticular system in normal adaptive behavior may be in the nature of a prevention of general arousal to all stimuli with a control of selective responsiveness to significant stimuli.

#### PLEASURE AND PAIN INDUCED BY SELF STIM-ULATION OF THE BRAIN

Experiments in which an electrode is chronically implanted in the brain and the circuit is arranged so that the animal can deliver shocks to himself at will have elicited results of extreme interest to psychiatrists. Stimulation of certain areas in the basal forebrain elicit feelings that are rewarding, positive or enamoring. Stimulation of other areas are punishing, negative and alienating (Brady). Different portions have quantitative importance. Placing them in the order from most to least rewarding in the monkeys they are, basal tegmentum of the mesencephalon, ventromedial nucleus of the hypothalamus, intralaminal system of the thalamus, septum, upper fornix and putamen. Animals avoid the electric shock when electrodes are placed in certain lateral and posterior parts of the diencephalon and in lateral parts of the tegmentum. The positive rewarding effects can be achieved within a broad system of structures whereas the negative effect is much less extensive.

When electrodes are in certain positive positions animals stimulate their brains more than 5,000 times an hour. Olds believes that the positive effect is derived from stimulation of cells actually involved in hunger, sexual and other reward processes. The rewarding experience often increases the hunger drive. Brady found that the rate of bar pressing in caudate stimulated animals is greatly reduced by feeding to satiety just prior to testing. In certain male animals self stimulation disappeared almost completely after castration, but returned to normal after the androgen level was restored. Others have suggested that the positive effect is of a convulsive nature (Doty). Porter obtained abnormal: spike and wave pattern's during self stimulation.

Brady showed that animals would to ate painful stimuli in order to obtain the positive self stimulation response. A conditioned emotional response of the fear or anxiety type failed to appear when the animal was pressing the lever for brain stimulation reward. A monkey receiving a rewarding stimulus has a facial expression of preoccupied relaxation. In general animals being stimulated in these regions are more tractable and have a more affectionate attitude toward the observer. An animal stimulated in the area of negative reward makes an effort to avoid the response and appears to be frightened or in pain. If an animal is left on this circuit for 8 hours there are deleterious after effects, irritability, biting and refusal to eat. This can be reversed by placing the monkey on a rewarding circuit. Andy reported that self stimulation of the amygdala and septal regions raises the pain threshold. Sem-Jacobsen stated that stimulation of the ventromedial region of the frontal lobe relaxed psychotic patients. Sharpless pointed out that the areas most effective in producing positive reinforcement are connected with the ventral branch of the bifurcating reticular activating system.

#### CHEMISTRY

There is considerable interest in the site of action of sedative, tranquilizing and stimulating drugs within the nervous system. Opinions differ and must be accepted provisionally. Bradley showed that cholinergic drugs do not appear to act on the reticular activating system of the brain stem but more diffusely and on a mechanism which is not concerned with behavioral changes in terms of wakefulness and sleep. This may be the diffuse thalamic projection system. Thus physostigmine, a cholinergic drug, produces a brain wave pattern of wakefulness without alerting the animal. Conversely, atropine, an acetlycholine antagonist produces a brain wave pattern of sleep even though the animal is alert. Both amphetamine and d-lysergic acid diethylamide (LSD25) give a brain wave pattern of wakefulness and the animals become alert and excited. With LSD25 the alerting appears to be depend-. ent upon external stimuli from the en-

onment. Chlorpromazine induces drowsiness and indifference with a decrease in response to auditory, visual and tactile stimuli. After the midbrain is transected, amphetamine no longer has any effect on behavior or electrical activity suggesting that it acts on the reticular system. It is possible that the effect of amphetamine may be related to its sympathomimetic action since adrenalin is highly concentrated in this region. The effect of LSD25, on the other hand, is lost after section between the cord and brain stem. The LSD25 may exert its influence on receptors more closely related to the collaterals entering the reticular system from the great afferent pathways. Thus the drug may sensitize the reticular system to external influences rather than excite it directly. Chlorpromazine produces only a moderate rise in threshold to responses elicited on stimulation of the reticular formation. At the same time the preparations become unresponsive to afferent stimuli and the latter no longer produce arousal. Phenobarbitone, on the other hand, exerts a depressive reaction on the reticular formation. Blocking of arousal to afferent stimulation may be a more specific action of this drug and may be due to its effect on receptors related to afferent collaterals entering the reticular formation.

Killam and Killam found that chlorpromazine markedly elevates the threshold for behavioral arousal following thalamic stimulation. The action of the drug in increasing the filtering of sensory input may contribute to the failure of behavioral arousal. The responses in the reticular system to evoked activity from the peripheral nerve are enhanced by chlorpromazine as are the inhibitory effects of stimulation of the reticular system on responses in the auditory system. They concluded that chlorpromazine enhances the controlling or filtering effects of the reticular formation on lateral sensory pathways.

#### ENDOCRINOLOGY

Hume found that there was a rather specific and separate localization in the hypothalamus for the control of the anterior pituitary secretion of corticotropin, thyrotropin and gon dotropin. The thyrotropin and corticotropin areas overlap and are located in the anterior portion of. the median eminence and the post-optic areas. The control of the gonadotropic hormone is in the posterior limb of the pituitary stalk and well localized to a small zone. Hume suggested that separate cell bodies, separate fiber tracts and separate portal veins connect with separate areas in the anterior pituitary controlling the secretion of these three substances. Fisher induced sexual activity in rats by stimulation of the lateral preoptic area. Sawyer presented evidence that the reticular activating system in the midbrain tegmentum and basal diencephalon has important implications in neuroendocrine function. Drugs or lesions which depress or destroy the reticular function inhibit activation of the pituitary ovulating hormone. Spontaneous ovulation is similarly controlled, at least in part, by the reticular formation. Harris postulated that endocrine function is affected in a major way by extralemniscal afferent fibers of many modalities influencing the hypothalamus to regulate both lobes of the pituitary gland.

Mason studied the neural control of the pituitary-adrenocortical response. Hypothalamic stimulation produced a marked hormone response. During stimulation these animals showed growing uneasiness, increased alertness and usually refused food. Similarly stimulation of the amygdala induced maximal rates of steroid rise. Minimal behavioral changes were associated with stimulation of the amygdala. A long period of hippocampal stimulation produced no change in the plasma steroid. However, samples drawn 24 to 48 hours later showed a marked suppression to levels well below the normal curve. Mason plotted the normal downward diurnal variation in corticosteroid levels. The peak in both blood and urine corticosteroid levels is in the morning and there is a steady downward trend during the remainder of the day until early morning when there is a sharp rise. Then, in monkeys he interrupted the outflow from the hippocampus either by removing it or sectioning the fornix. After this operation the day and night corticosteroid levels became roughly

P24,338

equal. He concluded that the hipposampus-fornix system appears to be involved in the maintenance of the normal diurnal rhythm in ACTH secretion. He postulated a cyclical mechanism from the reticular formation and hypothalamus up to the limbic system and back again, acting much as a negative feedback or dampening

influence on the hypothalamus and retidlar formation.

#### **BIBLIOGRAPHY**

- 1. Reticular formation of the brain, a symposium sponsored by the Henry Ford Hospital. Little, Brown and Co., Boston, 1958.
- 2. Magoun, H. W.: The Waking Brain. Springfield, Illinois: Charles C Thomas, 1958.

#### **ELECTROENCEPHALOGRAPHY**

W. T. LIBERSON, M.D., Ph.D.<sup>1</sup>

The number of national and local EEG societies has steadily increased. The Journal of EEG and Clinical Neurophysiology has published during the past year proceedings of the American, Austrian, Czechoslovak and Polish, Danish, Dutch, English, French, German, Italian, Norwegian, and Swedish societies. A perusal of these proceedings gives a fair idea of the progress accomplished during the past year as their publication is less delayed than the everincreasing number of detailed articles.

#### BASIC STUDIES

Genesis and Significance of the Normal and Abnormal Bioelectrical Activity: The problem of auto-rhythmicity of the nerve cells was submitted to ingenious tests. If the rhythmic electrical activity of a cell were due to an intrinsic mechanism controlling the interval between successive electrical pulses, then the following will occur. An artificial intracellular stimulus, applied through a microelectrode, would reset the rhythms in such a way that the spontaneous pulse following the stimulus will be delayed. The delay will be determined by the interval characteristic of the original rhythm. This is what occurs in an autopulsating tactile fiber isolated from the posterior paw of the cat. This was not found, however, in the isolated spinal cord cells (68), where the spontaneous rhythm . continues imperturbed despite the additional stimulus. Essentially the same results were found in the cortical neurons of the dog's cruciate gyrus, suggesting that the additional intracellular stimulus does not invade the structures responsible for the cells' original rhythmic activity. The synaptic bombardment is probably at least as important in determining the cells' pattern of firing (47). On the other hand, the frequency distribution curves of the rhythms of discharge of cortical cells, rather than the mean frequency of this discharge, were found to be sensitive indicators of physiological changes produced in the remote area of the cortex(7). Direct cortical responses resulting from the electrical stimulation of the cortical surface has been classically attributed to apical dendrites. Evidence was presented that this conclusion may be premature as the same type of responses may be obtained in the rabbits' hippocampal pallium where the orientation of the pyramids is opposite to that of the neocortex(33). Slowly propagating slow evoked potentials were recorded in the fornix-fimbria system suggesting further caution in interpreting all such potentials as originating in apical dendrites (38). Microelectrode analysis of the cortical neurons during experimental epileptic attacks showed a marked increase of the intrinsic frequency of firing (18).

Rhythmic sensory impulses were presented to subjects who had to indicate the cessation of the stimuli. Their reaction times were found to be a function of the frequencies of stimuli except that a nonlinear perturbation was observed at stimulus frequency near 10 c/sec. This observation strengthened the hypothesis of the role of alpha activity as a neuronic shutter(9). The importance of the local cortical circulatory homeostasis was considered(32) in the genesis of the three per second spike-and-

<sup>1</sup> VA Hospital, Hines, Ill.

we've activity. As to the delta rhythm, it was considered as indicating the presence of a functionally isolated cortex. Its relatively high incidence in the frontal regions is explained by an easy alteration of the tracks leading to this cortex (64).

Integrative Functions: A colloquium on sensory integrations was recently held in France. In cats, a transection of pons just rostral to the trigeminal rootlets, is followed by a low voltage, fast electro-cortical activity; while, if a transection is carried out more rostrally, a synchronized EEG cortical pattern is observed. This observation suggests the existence of an EEG synchronizing, and possibly sleep inducing influence of the structures located in the caudal brain stem (3, 13, 48). Thus, another reticular regulating system is being investigated. The presence of an alert EEG in certain patients in coma are explained on the basis of the above findings in the mid-pontine preparation (39). Convergence of stimuli originating in different sensory analyzers upon single cells of the basal nuclei(2) was also disclosed suggesting a participation of these structures in the sensory integration. Positive (pleasurable) and negative (adversive) effects of the electrical stimulation of the human brain were described. However, the mapping of these areas was difficult as either effects were observed at distances of less than half of 1 cm(61) and, therefore, are not as clearly distributed as in the lower mammals. A very effective locus for penile erection of the squirrel monkey lies in the medial preoptic region, rostro-ventral to the anterior commisure (42). Stimulation of the supracallosal mesial cortex in unanesthetized conscious cats produces bizarre behavior patterns and autonomic dysfunction of psychomotor-like character (30). A case of high amplitude vertex spikes in a post-traumatic aggressive behavior disorder was reported (43), thus correlating with the above observation.

Conditioning: Mechanisms of Uchtomsky's dominance response should be suspected if precocious or too stable conditioned responses are observed in certain patients. In one of them "conditioned" responses appearing after the third trial of photic stimulation were found from then on following a great variety of different sensory stimuli which were not previously associated with the photic stimulation; a relationship to obsession and hallucinations is discussed (45). Frequency specific cenditioning was elicited using photic stimulation of a frequency at or near the subjects' alpha rhythm. The presence of a conditioned response was ascertained by quantitative analysis of the record taken just before and just after the conditional stimulus (4). See also (29, 65).

#### CLINICAL STUDIES

#### Stimulation and Activation

Photic Stimulation: In 37 patient; with unilateral brain tumor lesions, fast rl-ythms could not be followed on the side of the lesion(16). Evoked occipital potentials are not as pronounced when the subject is very alert as when his attention relaxes (58). The diagnosis of hemianopsia is facilitated by electro-oculographic techniques (35).

Acoustic Stimulation: Intra-cerebral microelectrode recording of responses to repetitive clicks in human patients from a relatively wide area of the brain, including the insular cortex, reveals on and off effects as well as driven responses. These 3 different kinds of responses seem to reflect the activity of different systems as they show differential characteristics (11). A constant tone elicited for a period of 15 seconds at intervals of 30 seconds modifies the frequency of brain waves; it activates epileptic discharges in patients (children are more susceptible than adults) (33). On the other hand, an application of clicks (one per second) for 6-30 minutes elicits drowsy patterns" (34).

Hyperventilation: With increasing age, slow activity induced by hyperventilation shifts from the occipital to the anterior region in adolescents and young actults; in the older age groups a reverse shift is observed (toward the parieto-occipital region) (26). Sleep patterns were coserved in certain patients during hyperventilation (54). This is particularly frequent in narcolepsy (8, 55). A hyperventilation response is very prominent in tetany (25, 50, 56). EEG studies demonstrated that in some individuals an apparent normal blood sugar level constitutes a relative cerebral hypo-

glycaemia (74). A quantitative study of voluntary hyperpnea was presented (63).

Sleep: In one patient complaining of intractable insomnia, the absence of memory of sleep was ascertained by EEG. In another patient, the diagnosis of hysterical hemianesthesia could be made by applying tactile stimuli during sleep (60).

A plea for caution was made in the clinical interpretation of activation techniques as a result of a study of a normal population (66).

#### Pharmacology

Increased sychronization was found with chlorpromazine, promazine, and reserpine (slow waves); meprobamate (fast waves); iproniazid, imipramine (no frequency shift). Desyncaronization was found with diethazine, benactyzine, Win-2299, and LSD-25(21). A followup study concerning pentothal activating techniques in psychiatric patients was published: anti-depressants elicit patterns (fast beta and theta waves) which are attenuated or suppressed by the tranquilizers. Thus, the antagonistic effects of these drugs are considered (27). Diminished reactivity to auditory and visual stimuli was observed under the influence of chlorpromazine (17). However, visual evoked responses were not affected, while blinking artifacts were (10). Iproniazid increased nestling and attacking behavior and decreased sexual activity in monkeys; while EEG generally showed an increase of slow activity and greater spread of evoked after-discharges (75-100 mgs.) (14). Deaner which effects behavior disorders in children elicits fast activity (51).

#### Vascular Lesions

An increasing number of workers are reappraising the localizing significance of a focal depression and of the delta activity in subdural hematomas (20, 46, 69). Also a great number of workers are using a controlled unilateral carotid compression for the diagnosis of carotid occlusions (23, 40, 41, 44, 73; see also 22, 53).

#### Behavior Disorders and Psychological Correlations

Unilateral and bi-occipital slow activity was related to behavioral and epileptic

disorders in children (5, 12). Howe temporal localization of abnormality in behavior disturbances in children (24, 71) and adults (57) was also stressed. In retarded adolescents and adults the relationship between the alpha index and mental age is not simple; irregular tracings correlate with a poor psychomotor efficiency \* (49). If one plots the number of delta waves on a vertical axis and the number of beta waves on the horizontal axis in a standardized sample of the temporo-occipital EEG of normal adults, EEG groupings may be defined. They correlate with the durability, profoundness, etc. of feelings and strivings. Increase in beta activity is associated with vehemence, mobility, and velocity of emotions(72).

The level of CSF protein correlates with the excessive amounts of fast and slow activity in the EEG's of patients with schizophrenia or epilepsy. It also correlates with incidence of behavior abnormalities and/or of seizures. After an anastomosis effected by silicone rubber tubing connecting the temporal horn of the lateral ventricle to the subdural space, thus, diluting the protein content of the CSF, the seizure incidence and behavior abnormality were improved (19).

#### MISCELLANEOUS

Several authors found non-specific EEG abnormalities in muscular dystrophies (59, 70). This suggests that the latter represent. a much more diffuse process than previously accepted. A sharp wave pattern was described in Jakob-Creutzfeldt's disease(1). Hyper-synchronous, 3-5 per second waves were frequently found in Friedreich's ataxia (37). Bursts of generalized delta waves preceded tonic manifestations of "cerebellar fits" (28). Sudden bodily jerks upon falling asleep are not associated with paroxysimal electrical discharges (52). An interesting case of epileptic nystagmus was described (31). A relatively high percentage of abnormalities were found in aviation personnel(15, 67). It might be related to the stressful conditions of their activities (62). A survey of RCAF new entry pilot candidates shows that EEG has not yet proved of value in predicting success in flying training(6).

587

#### **BIBLIOGRAPHY**

- 1. Abbott, John: EEG Clin. Neurophysiol., 11: 184, 1959.
  - 2. Albe-Fessard, D.: Ibid., 11: 370, 1959.
  - 3. Batini, C., et al.: Ibid., 11: 381, 1959.
- 4. Bercel, N. A., et al.: Ibid., 11: 613, 1959.
  - 5. Blanc, C., et al.: Ibid., 11: 393, 1959.
  - 6. Brent, H. P., et al.: Ibid., 11: 616, 1959.
- 7. Burns, B. D., et al.: Ibid., 11: 601, 1959.
  - 8. Cahoon, E. B.: Ibid., 11: 184, 1959.
- 9. Callaway, Enoch, III, et al.: Ibid., 11: 614, 1959.
  - 10. Ciganek, L.: Ibid., 11: 179, 1959.
- 11. Chatrian, G. E., et al.: Ibid., 11: 397, 1959.
  - 12. Cohn, R.: Ibid., 10: 766, 1958.
- 13. Cordeau, J. P., et al.: Ibid., 11: 382, 1959.
- 14. Delgado, J. M. R., et al.: Ibid., 11: 396, 1959.
- 15. Dell, M. B., et al.: Ibid., 10: 762, 1958.
- 16. Drechsler, B., et al.: Ibid., 11: 176, 1959.
  - 17. Ekiert, H. et al.: Ibid., 11: 179, 1959.
- 18. Enomoto, T. F., and Ajmone-Marsan, C.: Ibid., 10: 764, 1958.
- 19. Farell, J. P., and Sherwood, S. L.: Ibid., 11: 602, 1959.
- 20. Favale, E., and Soriani, S.: Ibid., 11: 385, 1959.
  - 21. Fink, M.: Ibid., 11: 398, 1959.
- 22. Friedlander, W. J.: Ibid., 11: 182, 1959.
  - 23. Garde, A., et al.: Ibid., 11: 391, 1959.
  - 24. Gervasio, L.: Ibid., 11: 385, 1959.
  - 25. Goldberg, H. H.: Ibid., 11: 398, 1959.
- 26. Goldberg, H. H., and Strauss, H.: Ibid., 11: 615, 1959.
- 27. Goldman, D.: Ann. N. Y. Ac. Sc., 80: 687, 1959.
- 28. Gonsette, R., et al.: EEG Clin. Neurophysiol., 11: 393, 1959.
  - 29 Holubar, J.: Ibid., 11: 177, 1959.
- 30. Hughes, J. R., and Mazurowski, J. A.: Ibid., 11: 615, 1959.
- 31. Infuso, L., and Migliore, A.: Ibid., 11: 384, 1959.
  - 32. Ingvar, D. H.: Ibid., 11: 187, 1959.
- 33. Kandel, E. R., et al.: Ibid., 10: 765, 1958.
  - 34. Leroy, Claude: Ibid., 11: 392, 1959.
- 35. Lesevre, N., et al.: Ibid., 11: 388, 1959.
  - 36. Lesny, I., et al.: Ibid., 11: 185, 1959.

- 37. Lesny, I., and Vojta, V. : Ibid., 11 : 181,
- 38. Liberson, W. T., et al.: Ibid., 11: 397, 1959.
- 39. Loeb, Carlo: Ibid., 10: 589, 1958.
- 40. McBeath, J., and Friedlander, W. J.: Ibid., 11: 399, 1959.
- 41. McDowell, F., et al.: Ibid., 11: 400,
- 42. MacLean, P. D., et al.: Ibid., 11: 617, 1959.
  - 43. Mellina, S: Ibid., 11: 386, 1959.
- 44. Mensikova, Z., and Polak, O.: Ibid., 11: 176, 1959.
- 45. Michaux, L., and Lelord, G.: Ibid., 10: 761, 1958.
  - 46. Millar, J. H. D.: Ibid., 11: 603, 1959.
  - 47. Morrell, R. M.: Ibid., 11: 396, 1959.
  - 48. Moruzzi, G.: Ibid., 11: 369, 1959.
- 49. Netchine, S., et al.: Ibid., 10: 762, 1958.
- 50. Nevsimal, O., and Roth, B.: Ibid., 11: 181, 1959.
  - 51. Oettinger, L.: Ibid., 10: 778, 1958.
  - 52. Oswald, Ian: Ibid., 11: 601, 1959.
- 53. Porter, W. E.: Ibid., 11: 612, 1959. 54. Remond, A., et al.: Ibid., 10: 757, 1958.
  - 55. Roth, B.: Ibid., 11: 179, 1959.
- 56. Roth, B., and Nevsimal, C.: Ibid., 11: 181, 1959.
  - 57. Roubicek, J.: Ibid., 11: 176, 1959.
- 58. Samson, M., et al.: Ibid., 11: 387, 1959.
  - 59. Savoldi, F.: Ibid., 11: 386, 1959.
- 60. Schwartz, B. A., et al.: Ibid., 11: 391, 1959.
- Sem Jacobsen, C. W.: Ibid., 11: 379, 1959.
- 62. Sem Jacobsen, C. W.: Ibid., 11: 616, 1959.
  - 63. Soussen, G.: Ibid., 10: 758, 1958.
  - 64. Stein, Jiri: Ibid., 11: 180, 1959.
- 65. Storm van Leeuwen, W.: Ibid., 11: 611, 1959.
- 66. Ulett, G. A., et al.: Ibid., 10: 768, 1958.
  - 67. Vizioli, R.: Ibid., 11: 384, 1959.
  - 68. Wall, P.: Ibid., 11: 374, 1959.
- 69. Watson, C. W., et al.: Ibid., 10: 780, 1958.
- 70. Wayne, H. L., and Browne-Mayers, A. N.: Ibid., 10: 778, 1958.
  - 71. Wergeland, Hj.: Ibid., 11: 365, 1959.
- 72. Werre, P. F., et al.: Ibid., 11: 611, 1959.
- 73. Wills, B. C., and Bergman, P. S.: Ibid., 10: 775, 1958.
  - 74. Wyke, B. D.: Ibid., 11: 602, 1959.

# •

#### CLINICAL PSYCHOLOGY

#### FREDERICK WYATT, Ph.D.1

This year and the last mark the date when, to the several schools which have so far determined the views on psychological man in this country, a new one has been officially added. Existentialism for some time has had considerable influence on psychological and psychiatric thinking in Europe-shown for instance by the fact that the International Congress of Psychotherapy, meeting in Barcelona in 1958, adopted this ideology as its major topic. Thus it became an interesting question in the history of ideas and their relationship to cultural idiosyncrasies when existentialism would make its entry into this country. A growing interest in what people in other places are doing about man's uneasy estate and psychological discomfiture, and the consequent increase of communication seemed to favor acquaintance with an ideology now, even though the latter is decidedly alien to the intellectual temper of this country. Conversely, the overweening force of a pragmatic empiricism which had not changed much since de Tocqueville characterized it, and a profound wariness of speculative theories made it unlikely that existentialism would cut much of a swath here. What room there is for a comprehensive theory of motivation, character and adjustment, had been preempted by psychoanalysis. The very fact of certain similarities between the two, a kinship of orientation in spite of all the obvious and profound differences, also seemed to militate against the advance of existentialism (13, 2). (Both psychoanalysis and existentialism stress drives and anxiety, and the importance of the irrational, as well as subjective experience and the private world of the individual which make introspection the basic method. They have a global view of man, and emphasize "themes." Both hold as a fundamental premise that it matters much more for the individual what an event means than what it might objectively be classified

The progress of existentialism at this date

is therefore something of an historical surprise. Whatever the explanation may be, both for delay and for belated success, the . first textbook of existentialist psychology and psychiatry (by May, Angel and Ellenberger(11)) represents a notable contribution. This book gives an historical and philosophical account of the ideology as well as of its application—as "Daseinsanalyse"—to the problems of psychopathology by presenting several case studies. After the reader has begun to get used to an unaccustomed frame of reference and a peculiar terminology, he may well acknowledge certain general impressions. Existential psychology seems to be engaged in aspects of conduct which at times seem surprisingly close to those with which psychoanalysis has been concerned. Existentialists seem to prefer the dramatic sweep of issues large as life and death. All the world's a stage, and they like theirs to be no less than the world. At times existentialists appear to be disinterested to the point of disdain in the ordinary events of adjustment to which psychoanalysis has taught us to pay close attention. They often seem more at home in the world of transcendental accomplishments and failures than among the vital banalities of the body, its early crises and conflicts, and the self-made clichés which stem from them. On the other hand, existentialists also have learned to think in terms of a more inclusive image of man, and bring to its study a great deal of subtlety and imagination. Their quest for the meaning of man's collective, and of his private world, and their extensions of the traditional scope of that inquiry could be studied with profit by other schools. In summary, existentialism seems to me to neglect dimensions of conduct, the relevance of which can no longer be questioned; it cultivates others, and to comprehend them has concepts which are challenging and stimulating.

Those interested in a more detailed scholarly account of existentialism, not only as a school, but as a perennial train of philosophical thought, will appreciate Bar-

<sup>&</sup>lt;sup>1</sup> University of Michigan, Psychological Clinic, Ann Arbor, Mich.

rett's monograph(1) and Kaufmann's source book and commentaries(8).

While autonomous in his fusion of various trends of contemporary thinking with the abiding stimulus of psychoanalysis, Schachtel's work(12) clearly shows the influence existentialist and phenomenological -ideas. He stresses especially the activityseeking qualities of the organism as against the tension-release paradigm of psychoanalysis and of most learning theories. Schachtel limits himself to "emotion, perception, focal attention, and memory," but in conjunction with them provides one of the best syntheses of present-day personality theory in his notable essay on Memory and Childhood Amnesia which was first published a number of years ago and now forms the concluding chapter of this book.

Erickson's biographical study of Luther (5) shows the capacities of psychoanalytic ego psychology for illuminating a complex personality together with the issues which affected him and which in the end he himself altered profoundly. The book succeeds both in demonstrating the author's theory of identity which also involves the images and ideologies under the auspices of which identity is formed; and the genesis of a (religious) ideology relative to the genesis of a personality. Erickson's book also shows again how much the psychological interpretation of an historical figure may add to the understanding of the past, if it is informed by sensibility and knowledge of the period. Historical personages have the disadvantage that our knowledge of them is always fragmentary; although it is good to remember how limited our knowledge is even of the personalities we have had a chance to study directly and extensively. An historical figure, however, has one great advantage in spite of all methodological arguments: his course is completed and the lines of sequence and development in his life can sometimes be made more clear than in any immediate subject.

The problem of identity which, due mainly to Erickson's work, has become an important psychological concept, is treated by Wheelis (19) with a view to presenting problems of identity, especially in psychotherapy. The social (interaction) and sociological aspects of identity are discussed in

books by Goffman (6) and by Strauss (16). The methodological problems inherent in the psychological interpretation of history were treated by Wyatt and Willcox in a framework of interdisciplinary cooperation (20).

Among the numerous books of potential interest to the reader of this journal are: a contribution to the theory of therapeutic success by Melanie Klein(9); a survey of one of the newest branches of psychology, linguistic psychology, with impact on psychopathology, by Roger Brown(3); a study of aggression in animals, by J P. Scott(15) which should be of importance for any theory of aggression in man; an exceptionally well written text on adjustment by Roger Heyns (7), without the cretical dogma and based equally on experimental data and on practical sense; and a Psychology of Early Childhood by Landreth(10) with emphasis on genetic and experimental findings.

Finally, among the contributions more specific to clinical psychology should be mentioned: Wechsler's Measurement of Adult Intelligence which came out in its fourth, somewhat modified edition(18); a book about the diagnostic and prognostic cues to suicide by Schneidman and Farberow(14); a survey of what is known on the psychology of careers by Super and Bachrach(17); and finally, a comprehensive dictionary of psychological and psychoanalytic terms by English and English(4) which may fill a longstanding gap in the encyclographic aids of psychology.

#### BIBLIOGRAPHY

1. Barrett, William: Irrational Mam: A Study in Existential Philosophy. Garden City, N. Y.: Doubleday & Co., 1958.

2. Binswanger, L.: Erinnerungen an Freud.

Berne: A. Francke, 1956.

3. Brown, Roger: Words and Things. Glencoe, Ill.: Free Press, 1958.

4. English, Horace B., and English, Ava C.: A Comprehensive Dictionary of Psychological and Psychoanalytic Terms. New York: Longmans, Green, 1958.

5. Erikson, Erik H.: Young Man Luther: A Study in Psychoanalysis and History New

York: W. W. Norton, 1958.

6. Goffman, Erving: The Presentation of Self in Everyday Life. Doubleday Anchor Books. Garden City, N. Y.: Doubleday, 1959.

- 7. Heyns, Roger W.: The Psychology of Personal Adjustment. New York: Dryden Press, 1958.
- 8. Kaufmann, Walter: Existentialism from Dostojewsky to Sartre. New York: Meridian Books, 1956.
- 9. Klein, Melanie: Envy and Gratitude: A Study of Unconscious Sources. New York: Basic Books, 1957.
- 10. Landreth, Catherine: The Psychology of Early Childhood. New York: Knopf, 1958.
- 11. May, F., Angel, E., and Ellenberger, H. F. (eds.): Existence, A New Dimension in Psychiatry and Psychology. New York: Basic Books, 1958.
- 12. Schachtel, Ernst G.: Metamorphosis. On the Development of Affect, Perception, Attention and Memory. New York: Basic Books, 1959.
- Schmidl, Fritz: Psychoanal. Quart., 28:
   40, 1959.

- 14. Schneidman, E. S., and Farberow N. L.: Clues to Suicide. New York: Blackist Division, McGraw-Hill, 1957.
- 15. Scott, John Paul : Aggression. Chicago : University of Chicago Press, 1958.
- 16. Strauss, A. L.: Mirrors and Masks: The Search for Identity. Glencoe, Ill.: The Free Press, 1959.
- 17. Super, Donald E., and Bachrach, Paul B.: Scientific Careers and Vocational Development Theory: A Review, a Critique and Some Recommendations. New York: Bureau of Publications, Columbia University, 1957.
- 18. Wechsler, David: The Measurement and Appraisal of Adult Intelligence. (4th ed.) Baltimore: Williams & Wilkins, 1958.
- 19. Wheelis, Allen: The Quest for Identity. New York: W. W. Norton, 1958.
- 20. Wyatt, F., and Willcox, W. B.: The William and Mary Quart., 16: 3, 1959.

#### CLINICAL PSYCHIATRY AND PSYCHOTHERAPY

NOLAN D. C. LEWIS, M.D., 1 AND PAUL H. HOCH, M.D.2

As shown in the reviews of several former years, schizophrenia remains the most prominent topic for research and clinical reporting since it is universally recognized that the solution of this particular mental problem will constitute a major contribution to science, psychiatry, and economics. An overall picture of the disorder has been attempted by Professor Henri Ey(1) of France who presents a clinical and logical analysis in terms of the unity and diversity. The study is based on 366 cases of schizophrenia studied for some 15 years and reveals some interesting suggested definitions of several varieties in the group. In a study of the psychology of schizophrenia; Rashkis and Singer(2) reconsider the "double bind" theory of schizophrenia from the viewpoint of conflict, learning, and organizational theories. Their formulations are capable of being submitted to experimental testing.

A controlled experimental study of simple and choice reaction times in schizophrenia

1 New Jersey Neuropsychiatric Institute, Princeton,

<sup>2</sup>Department of Mental Hygiene, State of New York; College of Physicians and Surgeons, Columbia University.

was reported by Benton and co-workers (3). They found that "impairment in the performance of simple, high speed tasks appears to be a salient behavioral feature in many cases of cerebral disease and schizophrenia. Although they propose that this finding might be interpreted in different ways, it might be that the schizophrenic patients showing marked retardation in simple reaction time constitute a "special brain damaged subgroup." Boverman(4) in a paper on rigidity, chronicity, and resistance to human intervention, points out that "in some respects" patients with this disorder are "highly resilient and very responsive to human intervention." A phenomenological and statistical study of dreams and phantasies as they are found in the "natural history" of schizophrenia by Cappon(5) presents some interesting and informative material, and Bion(6) has described some detailed observations of hallucinations and the results that followed in the analysis of a schizophrenic patient. The mental mechanisms involved are discussed. Additional studies of this kind should be important and rewarding.

An extensive paper dealing with a study of 5 hospitalized families, each with a

zophrenic member, is presented by Strodey(7) of the Family Study Section of the National Institute of Mental Health. The investigation was centered in "direct daily experiences over a period of 21/2 years with these families who have lived as family units within the research hospital setting during which time these groups have participated together as family units in daily therapy meetings." Many aspects of method are discussed and impressions described. In a paper entitled "Episodic Behavior Disorders, Schizophrenia or Epilepsy," Monroe (8) presented an elaborate investigation of 20 hospitalized patients with complicated symptoms, which at the descriptive level suggested a diagnosis intermediate between epilepsy and schizophrenia. This special study is an interesting approach to the problem which should be read by those confronted with similar cases.

The literature on manic-depressive reactions reveals only a few contributions during the past year. Among the articles reviewed is that of Gibson and associates (9) on the dynamics of the manic-depressive personality, in which they discuss the family background, the child-parent relationships, and other factors involved in the develop-, ment of this particular personality. They outline two sets of factors which are important: 1. The state of ego development when major anxiety provoking experiences occur and; 2. The dynamics of interpersonal relationships between the family members. Lichtenberg(10) has studied the clinical, genetic, and dynamic implications, the personality defenses, the early and later management, and also the management of the interrelationships of the patient, the physician, and other persons in the environment during the manic phase of the psychosis. Of interest in differential diagnosis, Jeri (11) reported that of 32 patients suffering with cerebral cysticercosis, observed in the Sanatorio de Enfermedades Nerviosas y Mentáles and in the department of Mental diseases of the Instituto Nationale de Enfermedades Neoplasicas in Lima, 28 had mental disturbances along with the neurological symptoms. The mental disorders consisted of deliria, psychotic reactions of the chronic toxic-infectious type, and severe alterations of the personality requiring

elimination of the diagnoses of schizophrenia and manic-depressive psychosis which had been made previously.

In an article on cataplexy, Levin-12) pointed out that this condition which is a temporary "paralysis" or immobilization with loss of muscle tone may be evoked by impulses of aggression associated with guilt. The aggression may be overt and undisguised or it may be symbolic. In its various expressions, it is a conditioned inhibition, "a response to the guilt that attends aggression even when it is unconscious." Kempf in 1920 introduced the term "acute hemosexual panic," a reaction which is rather well recognized by clinical psychiatrists but seldom has been discussed in the l-terature. Glick(13) has made an attempt to define concisely this reaction under the title "Homosexual Panic: Clinical and Theoretical Considerations." It is an acute schizophrenic reaction, and when there is no homosexual content to be found, but only "undue malignant influence, phisical violence, or impending death," the author suggests the term "acute aggression panic." Dripps and associates (14) have discussed several aspects of attempted suicide including emergency treatment, the role of the psychiatrist, the attitude of the law, and social problems in the picture. They emphasize that persons who attempt suicide frequently receive inadequate treatment, and advise that the services of an anesthesiologist can be very helpful in special situations, followed by psychiatric help and particularly a careful evaluation of the possibility of a second suicidal attempt. Several examples of "psychic homicide" are offered by Meerloo(15) who relates it to his former concept of "menticide" and brings it into relation: ship with several aspects of suicide.

The way in which a person considers the real possibility of his own death has been seldom described in the literature of psychiatry. Brodsky(16) has described an interesting patient, whom he treated psychotherapeutically in an article entitled "Liebestod Fantasies in a Patient Faced with a Fatal Illness." The young woman patient attempted to ward off her fear of dying with the fantasy of eternal reunion with her dead brother. In a study of the female castration complex, Bieber and Drellich(17)

discussed the child bearing functions, menstruation, fears of loss of sexual desire and femininity, castration impulses, and various disturbances of feeling, and the feminine and phallic components of female sexuality. They formulate an interesting and detailed concept of female sexuality based on data derived from a study of hysterectomies, from psychoanalytic studies of women, and from observations on children. A report by Blum(18) presents the problem of psychogenic sterility in women. Anxiety as a deterrent to pregnancy, and the function of magical thinking in anxiety are described; "an important factor in failure to conceive is anxiety in response to the woman's perception both of herself as a child and of the maternal figure as having malevolent power." Lukianowicz(19) gives a very inclusive review of the literature on transvestism with a bibliography of 104 references. He surveys a wide variety of items pertaining to this subject including termiand definitions, classifications, nology causes, psychoanalytic theories, and other types of explanations. The clinical picture and the relationships between it and several other sexual deviations; the roles of cultural factors and of societal environment are described. Weisman(20) has described a quadrilateral method of psychodynamic formulation by which clinical findings may be integrated with an explanatory hypothesis. The 4 aspects of the formulation depend upon and analysis of: 1. Ego regulating functions; 2. Predominant emotional patterns; 3. Object relationships and; 4. Nuclear elements composed of context temporal factors and antinomies of wishes and fears. The viewpoint is based on the concept of conflict. The detailed description of this type of formulation suggests that it will be found useful in research and in the practice of psychotherapy.

A statistical study of first admissions with psychoneurosis in New York State institutions during the period 1949-1951 was reported by Malzberg (21) who presented data on legal status, age, environment, economic status, education, marital state, race, nativity, and migration factors. The results are important not only for a survey of the psychoneuroses, but also for comparison with previously accumulated data on the

psychoses. An analysis of the nature of neurotic process in terms of the social force operating as universals in the evolution of the neurosis has been presented by Kubie (22). Various trends, thinking, and fallacies, and cultural variables acting on the components of the neurotic process are outlined. A study utilizing a structuralized interview for the comparison of group of controls, neurotic, and psychotic women, was reported by Winokur and co-workers (23). The developmental symptoms of enuresis and somnambulism were apparently not indicators of a later mental disorder. The psychotics had a higher incidence of miscarriages and a lower incidence of somnambulism, and a significantly higher percentage of psychotics had sexual intercourse infrequently. Such factors as menopausal symptoms, dysmenorrhea, frequency of orgasms, and enjoyment of coitus did not differentiate the groups studied.

The clinical picture, the psychopathology, and the prognosis of the well known type of obsession in women who fear they may kill their child are described by Chapman (24). This obsession is usually combined with the obsessive fear of insanity. The patient fears that even such strong ideas of murdering a child must indicate signs of mental disorder and that if this is the case it could easily lead to infanticide. Cancerophobia was the focus of a study by Fellner (25) who describes two types of patients who go to physicians because of fear of having cancer and who have no objective signs of malignancy. The true cancerophobics can accept the reassurance and gain relief, while those in whom the idea is a real delusion are unable to accept reassurance, but tend to become increasingly anxious with indications of a severe underlying emotional disorder requiring urgent psychiatric treatment. The role played by anxiety in psychophysiologic reactions revealed by an experimental study of 67 post-lobotomy patients before and following operation was presented by Franks and associates (26). Their results support the hypothesis that the operation reduces the psychophysiologic symptoms and complaints, and that there is a definite decrease in the frequency of reported symptoms when the anxiety is alleviated.

--

review of the literature on the subject anorexia nervosa, and the presentation of 15 case histories of patients treated at the Westchester Division of the New York Hospital over a period of 18 years with a discussion of the diagnosis and results of therapy has been published by Wall(27). He emphasizes that "treatment involves psychotherapy, tube feedings, insulin or electroshock therapy, but also involvement in hospital social activities and separation from families to allow the patient to grow up." The death instinct as conceived by Freud in the light of the second law of thermodynamics is discussed by Saul (28) in a thought-provoking article in which, after presenting the evidence for the theory, he concludes that "it is readily conceivable that just as the forces toward increasing life are reflected in the mind as self-preservation, sex and mating, and the like, so the direction of the chemical processes toward reversal is reflected in a tendency of the whole organism which can properly be termed as a death instinct." In an elaborate study, Kardiner and co-workers (29) have discussed the basic Freudian concepts, subjecting them to a critical examination. The results of the study have been divided into 4 parts, 3 of which have now appeared in print, namely, "Basic Concepts," "The Libido Theory," and "Narcissism, Bisexuality," and the "Dual Instinct Theory." The fourth paper in the series will deal with a new structural hypothesis, a revised theory of anxiety and post-Freudian ego psychology. Alternative explanations are suggested in places where the Freudian concepts are thought to be defective. The alternative explanations are derived from an "adaptational frame of reference rather than from the Freudian instinctual one." Some of the characteristics of dreams have been explored in relation to the conditions prevailing during sleep in terms of the adaptative function of the dream by Ulman (30). He directs attention to the possible role of neurophysiological changes during sleep, the role of the reticular activating system, and other possible important components in the dream work and function. Clinical material is presented to support the theoretical concepts which emphasize that the dream is the unique means of coping

with man's biological environment including the sociobiological aspects.

Serban (31) has presented the psychotherapeutic approach of the Pavlovian school to problems of neurosis. In the concepts of this school the social factor in personality formation plays a prominent role, and mental activity results from the function of the brain as determined by the person's existence. In Russian rsychiatry since a neurosis is determined by the existence and by physiological factors, it has to be studied and treated by the materialistic method conceived by Pavlov. Therefore, the psychotherapeutic approach is physiological, materialistic, philosophica, and dialectical. Psychotherapy based on Freud and on Pavlov are contrasted. An investigation of the role of sociodynamics in psychotherapy was published by Gordon (32) who studied 601 adults in an experimental group and 98 children as controls. The adults and the children as well, were divided into two groups, one treated by dynamic psychotherapy alone and the other by the addition of social therapy. The adults reacted definitely better with social and dynamic therapy combined than with insight therapy alone. The two groups of children showed no marked differences. The social therapy in this extensive study consisted of a betterment of the social environment, emotional support, good friends, social organizations such as clubs and educational opportunities. An article by Stevenson (33) discusses some of the theoretical and practical aspects of the direct instigation of behavioral changes in psychotherapy. He treated 21 psychoneurotic patients by attempting to instigate new behavioral responses on the part of the patient toward persons in his environment with interviews focused principally on the patient's current relationships. Fourteen of the patients were much improved and follow-up interviews ranging from 9 months to several years revealed that improvements had been sustained. During the treatment, the number of interviews with the improved patients averaged 61. The same author (34), in another article advises that much could be learned about psychotherapy by means of studies other than by this method; but emphasizes that a therapy is a therapy, only by its results, and not by theories regardless

of how elaborately they may be formulated.

A discussion of the difficulties and factors that tend to cause patients to "drop out" of therapy is offered by Gedo (35). The "emotional climate of premature therapeutic separation is illustrated by case reports, and Cooper (36) emphasizes that prejudicial attitudes are attended by strong emotions. He reports extensive studies to show that physiological tests support this thesis. Results with tranquilizers are now forcing the psychotherapists to take into account their results in therapy, and particularly the nature of the results. Combinations of psychotherapy and drug therapies are now a much advocated approach. Hoch (37) in a useful discussion of the situation, approaches the question as to how much psychotherapy is needed for patients under drug treatment, and particularly the extent of its use in schizophrenic patients. He expresses the belief that the combination is of special importance in such patients especially, if it can be applied without detriment to the therapeutic situation. He places emphasis on the fact that each patient is a special problem requiring sound clinical judgment, and that generalizations or indications for one therapy or another are not applicable. He advises that the experts in psychotherapy pay more attention to integrated treatment. Cattell(38) in an informative survey of the drugs used has published a tabulated list of selected psychopharmacological agents giving clinical names, manufacturer, range of daily dosages, and side reactions. It value for purposes of reference and guidance is obvious. Some controversial issues are also mentioned. The use of Ritalin in psychotherapy of depressions in aged persons was reported by Jacobson (39), who studied the effect it might have on both reactive and involutional types of depressive states. Manic-depressives were excluded from the study. He found that the drug facilitated communication and cooperation chiefly by its mood elevating effects, and therefore is a useful A adjunct to psychotherapy. There was also an increase in alertness and an alleviation of morning depression and fatigue. He also found Ritalin useful in counteracting lethargy or over-sedation from ataractic drugs.

Concerning the psychotherapy of alco-

holism, Lemere (40) explains the attitude of the physician and of the family toward alcoholic problems, and makes a plea to physicians in general to try to understand and to recognize that alcoholism is a disease, and that it is so considered by The American Medical Association, as well as by the public. He outlines in some detail the chief characteristics of the condition, describes what the alcoholic must do to help himself, and explains the special functions of the therapist in such a setting. The role of the family physician in the prevention of emotional disorders is presented by Caplan (41). He advises the family doctor to develop a working relationship with a psychiatrist who can aid him in improving his ability to recognize the emotional needs, the mental health requirements, and the early symptoms of mental trouble in the families where he has to practice among the problems of pregnancy, divorce, bereavement, and other crises with which he is in immediate contact. He is usually in a position to exert a healing effect and to aid in the adjustment of those involved in life problems. Schiff and Pilot(42) offer an approach to psychiatric consultation which they have found adequate in the general hospital setting. It is based on a viewpoint primarily consultation-oriented rather than patient-oriented. Case histories are presented to "illustrate the nature of the concerns not made explicit, how they may operate in the management of the patient. and how they have been dealt with by the consultant."

Among the outstanding books of the year is the two-volume American Handbook of Psychiatry (43) prepared by 111 contributors and comprising some 2000 pages. It contains several chapters on clinical psychiatry and psychotherapy.

#### BIBLIOGRAPHY

- 1. Ey, H.: Am. J. Psychiat., 115: 706, 1959.
- 2. Rashkis, H. A., and Singer, R. D.: A.M.A. Arch. Gen'l. Psychiat., 1: 406, 1959.
- 3. Benton, A. L., et al.: A.M.A. Arch. Neurol. and Psychiat., 81: 373, 1959.
- 4. Boverman, M.: A.M.A. Arch. Gen'l. Psychiat., 1: 235, 1959.
- 5. Cappon, D.: A.M.A. Arch. Gen'l. Psychiat., 1:17, 1959.

- 6 Bion, W. R.: Int. J. Psychoanal., 39:
- 7. Brodey, W. M.: A.M.A. Arch. Gen'l. Psychiat., 1: 379, 1959.
- 8. Monroe, R. R.: AMA Arch. Gen'l. Psychiat., 1: 205, 1959.
- 9. Gibson, R. W., et al.: Am. J. Psychiat., 115: 1101, 1959.
- 10. Lichtenberg, J. D. : J. Nerv. and Ment. Dis., 129 : 243, 1959.
- 11. Jeri, R.: Rev. Psiq. Peruana, 1: 211, 1958.
- 12. Levin, M.: Am. J. Psychiat., 116: 113, 1959.
- 13. Glick, B. S.: J. Nerv. and Ment. Dis., 129: 20, 1959.
- 14. Dripps, R. D., et al.: J.A.M.A., 171: 523, 1959.
- 15. Meerlo, J. A. M.: A.M.A. Arch. Neurol. and Psychiat., 81: 360, 1959.
- 16. Brodsky, B.: Int. J. Psychoanal., 40: 13, 1959.
- 17. Bieber, I., and Drellick, M. G.: J. Nerv. and Ment. Dis., 129: 235, 1959.
- 18. Blum, L. H.: J. Nerv. and Ment. Dis., 128: 401, 1959.
- 19. Lukianowicz, N.: J. Nerv. and Ment. Dis., 128: 36, 1959.
- 20. Weisman, A. D.: A.M.A. Arch. Gen'l. Psychiat., 1: 288, 1959.
- 21. Malzberg, B.: Am. J. Psychiat., 116: 152, 1959.
- 22. Kubie, L.: J. Nerv. and Ment. Dis., 128: 68, 1959.
- 23. Winokur, G., et al.: Am. J. Psychiat., 115: 1097, 1959.

- 24. Chapman, A. H. A.M.A. Arch. Cen'l. Psychiat., 1: 12, 1959.
- 25. Fellner, C. H.: J.A.M.A., 170: 1776, 1959.
- 26. Franks, J., et al.: A.M.A. Arch. N=urol. and Psychiat., 81: 227, 1959.
- 27. Wall, J. A.: Am. J. Fsychiat., 115:. 997, 1959.
- 28. Saul, L. J.: Int. J. Psychcanal., 39 323, 1958.
- 29. Kardiner, A., et al.: J. Nerv. and Went. Dis., 129: 11, 133 and 341, 1959.
- 30. Ulman, N.: J. Nerz. and Ment. Dis., 129: 144, 1959.
  - 31. Serban, G.: J.A.M.A., 170: 1651, 1959.
- 32. Gordon, R. E.: A. A.A. Arch. Neurol. and Psychiat., 81: 486, 1,59.
- 33. Stevenson, I.: A.M.A. Arch. Gen'.. Psychiat., 1: 99, 1959.
- 34. Stevenson, I.: Am. J. Psychiat., 116: 120, 1959.
- 35. Gedo, J. E.: `A.M.Ł. Arch. Gen'l. Psychiat., 1: 3, 1959.
  - 36. Cooper, J. B.: Scierze, 130: 314, 1959.
- 37. Hoch, P. H.: Am. J. Psychiat., 116: 305, 1959.
- 38. Cattell, J. P.: Am J. Psychiat., 116: 352, 1959.
- 39. Jacobson, A.: Psychiat. Quart., 32: 474, 1958.
  - 40. Lemere, F.: J.A.M A., 171: 266, 1959.
  - 41. Caplan, G.: J.A.M.A., 171: 497, 1959.
- 42. Schiff, S. K., and Elot, M. L.: A.M.A. Arch. Gen'l. Psychiat., 1: 349, 1959.
- 43. American Handbock of Psychiatry: S. Arieti, Editor. New York: Basic Books Inc., 1959.

Prom - a mal

## PHYSIOLOGICAL TREATMENT

# JOSEPH WORTIS, M.D.1

Several pharmacological and clinical review articles which have appeared during the past year will help the bewildered psychiatrist to organize his information on the vast and growing literature of psychopharmacology. Hippius and Kanig(1) distinguish three main classes of phenothiazines: the promazine, the mepazine, and the perazine groups, characterized respectively by propyl, piperidyl-methyl or piperdyl-ethyl, and piperazinyl-propyl side

<sup>1</sup> State University of New York, Downstate Medical Center, and Jewish Hospital of Brooklyn, Brooklyn 38, N. Y. chains. It is the last group, which includes Compazine, Trilafon and Stelazine, that the authors regard as our most potent thenothiazine therapeutic agents. Himwich (2) concurs in this judgmert. Hoffman (3) and Hollister (4) have also each written general pharmacological accounts of some of the new drugs, and authorative general clinical discussions will be found in the recent essays by Delay (5) and by Sargant (5, 7).

# TOFRANIL AND OTHER ANTI-DEPEESSANTS

In Germany, Austria, Italy, France, Switzerland, Canada, Cuba, Spain, and in the

U. S. A. (8-30) almost all reports agree that iminodibenzyl (Tofrānil) will relieve at least half the cases of endogenous depression in a matter of days or weeks, and will benefit other types of depression as well. Dosages of 100 to 150 mg. a day are recommended; higher doses are seldom required. Side effects, though common, are usually mild and may involve dryness of the mouth, disturbances of accommodation, headache, dizziness, tremors or twitchings, sweating, flushes, constipation, thirst, insomnia, pruritis, paresthesias, dysarthria and glossitis. More rarely epileptic seizures, confusion, hallucinations or hypomanic states may supervene. Since even the milder side-effects may be distressing to depressed patients, it is advisable to keep dosage to a minimum, especially in older patients. Delay, Deniker and Lemperière (15) think a combination with phenothiazines, especially levopromazine, improves the results.

Its range of usefulness seems similar to that of Marsalid, though individual cases may respond better to one drug than the other. Freyhan(31), Hoff(32) and Kainowsky(33) all still regard electroshock treatment as the treatment of choice where suicidal risk cr other considerations make quick action essential, or where toxic side effects might be disturbing. In milder cases, treatment with Tofranil for a week or two may obviate or reduce the need for EST, and it is also of value in preventing relapse after EST(34). Though neither method of treatment will prevent or delay the return of a cyclic depression, remissions after EST appear to be better maintained. Tofranil can also be cautiously used in handling depressions of the aged (35). As an interesting side light it is also said to be helpful in relieving mucous colitis, rheumatoid arthritis and hypertension (36). The recent supplementary volume (37) of the Canadian Psychiatric Association Journal provides an excellent review of the entire subject.

The proceedings of a full and informative conference on the amine oxidase inhibitors have just been published (38). Though the anti-depressant action of Marsalid is remarkable (39, 40), its toxicity gives serious reason for concern. Borenstein and Dabbah (41) report frequent though usually tran-

sient disturbances in liver function, as reflected in cholesterol levels. Nine cases Marsalid hepatitis are reported from a single hospital in New York (42). Another recent report(43) lists 3 cases. Hoheisel (44) in Germany also describes several. Cases with toxic symptoms of delirium and melena, sometimes with fatal outcome, arereported elsewhere in Europe (45, 46). By the middle of 1958 the New Drug Branch of our Department of Health, Education, and Welfare had heard of 180 cases of Marsalid hepatitis, 20% resulting in death. Both Kielholz (47) and Kalinowsky (33) have abandoned Marsalid because of the serious liver and circulatory complications reported. Meanwhile the producers of Marsalid are making available a new amine oxidase inhibitor of related structure known as Marplan. This is a more potent and more toxic drug, but can be used in smaller doses and is said to have a better therapeutic index (48, 49). B-phenylethylhydrazine (Nardil) is another antidepressant amine oxidase inhibitor that has recently been introduced (50).

Intermittent sleep therapy, induced by various hypnotic combinations, continues to demonstrate its value not only in depressions, but in certain cases of schizophrenia, neurosis (51, 52), and psychosomatic conditions (53) as well.

#### PHENOTHIAZINES AND OTHER SEDATIVES

Newer reports continue to confirm the value of chlorpromazine in the treatment of schizophrenia (54-56). Thorazine, it is interesting to note, also has a certain antibacterial effect and reinforces the action of several antibiotics (57). In spite of the frequency and prominence of the extrapyramidal side effects perphenazine (Trilafon) also maintains its usefulness (58, 59). A combination with mepazine (Pacatal) reduces the Parkinsonism (60), but may increase the danger of agranulocytosis. Trifluoperazine (Stelazine) is a potent agent in the treatment of hallucinating, deluded, withdrawn, agitated patients, especially paranoid schizophrenics, but also induces marked extrapyramidal effects, especially when doses exceed 20 mg. a day (61-64). Combination with antiparkinsonian drugs such as Cogentin has been found helpful (65). Gearren (66) uses it

in Affice practice to relieve anxiety. Another Active trifluoride phenothiazine related to Trilafon is fluphenazine (Prolixine), said to be 25 times more potent than Thorazine, quickly effective in parenteral use, but with the same serious extrapyramidal accompaniments, and a special tendency to • induce leukopenia (67). Triflupromazine (Vesprin) is another potent drug, which may induce convulsions, weakness and ataxia. Neither jaundice nor dermatitis has thus far been reported, but aside from its potency and rapidity of action, it seems to have no advantage over Thorazine (68-71). Proclorperazine (Compazine) has a similar range of indications, similar potency and similarly distressing extrapyramidal sideeffects, sometimes reaching alarming proportions (72-74). Reduction of dosage and use of antiparkinsonian drugs are advisable when serious symptoms threaten. One case is described where spasms and severe glottis edema required tracheotomy (75).

Promazine (Sparine) seems to have no real advantage over chlorpromazine, and carries the danger of convulsions, vascular collapse and agranulocytosis, though on moderate dosage (200-600 mg. per day) it is said to be well tolerated (76-79). Levopromazine (known as 6549 RP in France) has been favorably described as a drug of low toxicity and mild action, of particular value in depressions (80-83). Acetylpromazine (Plegicil in France) is more potent than Thorazine but is said to induce no Parkinsonism, though it has been relatively little used, and reports are scarce (84).

Thiopropazate hydrochloride (Dartal) is about 5 times more potent than Thorazine, with a similar range of indications and complications (85, 86). Another new phenothiazine developed by the French firm Specia as 7843 RP is closely related to proclorperazine, is very potent, calms excitement with great rapidity and has been found helpful even in chronic resistant schizophrenic cases with defect (87, 88). Mention should also be made of the French 4362 RP methopromazine (89), similar to chlorpromazine, and Ciba's 17040, which appears with the usual report of efficacy and low toxicity (90).

N- (2'-[1"-methyl-2"-piperidyl]-ethyl)-3-thiomethyl-phenothiazine, abbreviated as thioridazine, was introduced on the continent by Sandoz as TP 21 and is marketed here as Mellaril (91-96). Though milder in its action than Thorazine, it has a wide range of usefulness and sometimes helps where Thorazine has failed. It is said to be especially effective in moderately excited cases and in certain depressive syndromes with negativism; it relieves incomnia as well as pain and many psychosomatic complaints. On the whole it is well tolerated, though skin reactions have been reported and 10% of treated cases show definite leukopenic tendencies. Extrapyramidal effects are rare, and hepatic dysfunction has not been reported. It has a tendency to induce galactorrhea. Kinross-Wright (97) regards it as a definitely superior drug.

Hydroxyzine (Atarax) is described as especially beneficial in relieving anxiety and bizarre, autistic or delusional thinking (98). Side effects are said to be minimal. Azacyclonol (Frenquel) displays a curiously specific effect on hallucinations, and a trial intravenous test is advised in cases where persisting hallucinations are prominent symptoms (99, 100). Methylpentynol (Oblivon) is recommended for younger children as a well tolerated non-toxic sedative, especially suited to relieve anxious, mildly disturbed, or acutely upset children who are otherwise normal—in hospital ward situations, for example (101, 102).

### OTHER NEW DRUGS

Haloperidol, R 1625, is a potent drug, a few mg. of which, administered by injection, quickly controls psychomotor agitation (103). It is also hypotensive. Meduna and Abood (104) have been experimenting with a new hallucinogenic drug N-ethyl-3piperidyl cyclopentylphenyl glycolate hydrochloride (Ditran) with an atropin-like anticholinergic action which is said to be very effective in reactive depressions. Dimethazan is a xanthine caffeine derivative which had a striking restorative effect on a group of debilitated chronically ill patients (105). Simon(106) claims success with a new whole pituitary extract in the treatment of involutional depressions, and Zhuravleva (107) treats schizophrenic and hypochondriacal cases with a series of parenteral injections of a special povine blood preparation called parenterine.

## SYNAPTIC CONDUCTION AND PSYCHOSES

. Sigg(108) suggests that Tofranil derives its anti-depressant action by sensitizing central adrenergic mechanisms at the synaptic level, while Marsalid protects the transmittor substance from breakdown, and he proposes the reasonable general theory that all anti-depressant agents operate through an activation of central adrenergic mechanisms. Hoffer (109, 111) also predicts that the catecholamines will prove to be the crucial factors in depression. During depression the excretion of catecholamines is reduced(110). Perhaps paranoia, a species of over-responsiveness at the other end of the scale, reflects excessive adrenergic activity. Amine oxidase inhibitors like atebrine, cocaine, amphetamine, ephedrine, and several local anesthetics (Tofranil is also a topical anesthetic) can all induce psychotic symptoms. Tofrānil, like Marsalid, increases brain serotonin and catecholamines (112). From this point of view the atropin-like character of Tofranil is interesting. But no simple formula can explain all the complexities: small doses of atropin may induce a psychosis (113, 114), but large doses can also relieve one, and atropin coma has been described as virtually specific in terminating manic attacks (115). Flügel(116) suggests that antiparkinsonian drugs tend to be anti-depressive, while drugs like chlorpromazine, which induce Parkinsonism, are contraindicated in depression. Büssow(117) finds that supplementation of reserpine or chlorpromazine with atropin makes it possible to successfully treat depressions. Orphenedrine chlorhydrate, an atropin-like drug, has a striking stimulating euphoriant and anti-depressive action which promises to be useful both as a phenothiazine antidote and in the direct treatment of akinetic depressions (118). Stern(119) also believes that a surplus or deficiency of monoamino oxidase may be the cause of some psychoses.

## TOXICITY AND SUICIDES

Sales of psychopharmaca now exceed \$200,000,000 a year in this country(120). In little Denmark (population 4,500,000), 61,000,000 tablets of meprobamate alone were sold in 1958, addiction is widespread, withdrawal symptoms severe, and suicidal

attempts by means of the drug quite common, 87 instances being known to one author (121). Millions of Americans are now using these newer drugs. At the Madison, Wisconsin Poison Information Center, 1% of all inquiries now concern the tranquilizing drugs (122). In 1955 the Public Health Committee of the New York Academy of • Medicine knew of 12 tranquilizer poisonings; there were 8 times that number in 1956, including at least 2 fatalities (123). During the past year fatalities have been reported from Trilafon(124), Pacatal(125), and especially from Sparine (126-128), either from agranulocytosis or from vascular collapse. In one series of 3,000 cases treated with Thorazine, Promazine or Compazine, 18 cases of agranulocytosis occurred, many of them in younger patients (129). Attention should also be directed to the very greatly increased liability to thrombosis, thrombophlebitis and pulmonary embolism in patients under chlorpromazine or reserpine (130). In addition to serious hepatic dysfunction, severe spasms or convulsions can occur during treatment with a variety of phenothiazines, including Compazine, Stelazine, Vesprin, Trilafon and Thorazine (131-133). All of the drugs are not only liable to be implicated in suicidal attempts. but some of them may even induce dangerous depressions. In view of this it is essential that publicity be given to the dangers of misuse and abuse of these newer medicines, and that toxicity be adequately advertised. Surveillance and caution are both required, particularly with newer drugs where clinical trial has been brief and inadequate.

### MISCELLANEOUS

In a comparative study of a very large case material it was found that acute schizophrenic cases did best when treated at first with insulin coma and later maintained on Thorazine (134). Only the cases of several years duration did better on Thorazine. If this chronic case material is treated for 6 months with at least 300 mg. per day, few cases—and these mostly paranoid or hebephrenic—will be found resistant to treatment (135, 136). Vartanian (137) recommends lithium carbonate in cases of prolonged agitation where Thorazine or

other measures are unavailing, or where it is for any reason contraindicated.

Stevens and Dunn (138) again confirm the fact that thyroid activity is often depressed in psychoses, especially in agitated cases. Danziger's claim of remarkable success with massive thyroid treatment of acute \*schizophrenic patients should not be disregarded (139).

### BIBLIOGRAPHY

- 1. Hippius, H., and Kanig, K.: Fortsch. Neur. Psychiat., 26: 582, 1958.
- 2. Himwich, H. E.: Am. J. Psychiat., 115: 756, 1959.
  - 3. Hoffman, T.: Med. Klin., 54: 323, 1959.
- 4. Hollister, L. E.: California M., 89: 1, 1958.
- 5. Delay, J.: Bull. Acad. nat. méd., 143: 250, 1959.
- 6. Sargant, W.: Brit. M. J., No. 5103: 1031, 1958.
- 7. Sargant, W.: Brit. M. J., No. **5104**: 1095, 1958.
  - 8. Kunz, I.: Aerztl. Wschr., 14: 332, 1959.
- 9. Von Baeyer, W.: Nervenarzt., 30: 1, 1959.
- 10. Hift, S., and Kryspin-Exner, K.: Wien. med. Wschr., 109: 453, 1959.
- 11. Urbani, M., and Saginario, M., Manghi, E., and Costa, P.: Riv. sper. freniat., 83: 277, 1959.
- 12. Zappoli, R.: Riv. sper. freniat., 83: 289, 1959.
- 13. Declich, M.: Riv. sper. freniat., 83: 308, 1959.
- 14. Trabucchi, C., Zuanazzi, G. F., and Caceffo, G.: Riv. sper. freniat., 83: 328, 1959.
- 15. Delay, J., Deniker, P., and Lemperière, T.: Presse Méd., 67: 923, 1959.
- 16. Pasquet, P., Langlois, M., and Vercel, R.: Ann. Méd. Psychol., 1: 377, 1959.
  - 17. Tschudin, A.: Praxis, 47: 1100, 1958.
- 18. Kielholz, P., and Battegay, R.: Schweiz. med. Wschr., 83: 763, 1958.
- 19. Schneider, P. B., and Crot, M.: Praxis, 48: 313, 1959.
- 20. Lehner, F. H.: Schweiz, med. Wschr., 89: 209, 1959.
- 21. Malitz, S., Wilkens, B., and Esecover, H.: Canad. Psychiat. Assoc. J., 4: S152, 1959.
- 22. Lehmann, H. E., Cahn, C. H., and DeVerteuil, R. L.: Canad. Psychiat. Ass. J., 3: 155, 1958.
- 23. Tavener, R. H.: Canad. Psychiat. Ass. J., 4: 8, 1959.
- 24. Azima, H.: Canad. M. Ass. J., 80: 535, 1959.

- 25. Straker, M.: Canad. M. Ass. J. 80: 546, 1959.
- 26. Gutierrez Agramonte, E. A.: Arch. Hosp. univ., 11: 38, 1959.
- 27. Coullaut Mendigutia, R.: Rev. cl., españ., 72: 162, 1959.
- 28. Azima, H., and Vispo, R. H.: A.M.A.. Arch. Neur. Psychiat., 81: 658, 1959.
- 29. Ayd, F. J., Jr.: Bull. School M. Univ., 44: 29, 1959.
- 30. Ayd, F. J., Jr.: J. Neuropsychiat., 1: 35, 1959.
- 31. Freyhan, F. A.: Canad. Psychia: Ass. J., 4: S86, 1959.
- 32. Hoff, H.: Canad. Psychiat. Ass. J., 4: S55, 1959.
- 33. Kalinowsky, L. B.: Canad. Ps, chiat. Ass. J., 4: S138, 1959.
- 34. Delay, J., and Deniker, P.: Canad. Psychiat. Ass. J., 4: S100, 1959.
- 35. Cameron, D. E.: Canad. Psychiat. Ass. J., 4: \$160, 1959.
- 36. Remarks from floor. Canad. Psychiat. Ass. J., 4: S99, 1959.
- 37. Special Supplement: McGil Univ. Conference on Depression and Allied States., Canad. Psychiat. Ass. J., 4: 1959.
- 38. Amine Oxidase Inhibitors: 80: Art. 3551,-1045, Ann. N. Y. Acad. Sc., 1959.
  - 39. Tauber, C. G.: Praxis, 48: 489, 1959.
  - 40. Tauber, C. G.: Praxis, 48: 508, 1959.
- 41. Borenstein, P., and Dabbah, M.: Ann. Méd. Psychol., 1: 923, 1959.
- 42. Kahn, M., and Perez, V.: Am. J. Med., 25: 898, 1958.
- 43. Levin, H. G., Berk, J. E., Paul, L. J., and Berman, C.: Am. J. Digest Dis., 4: 297, 1959.
- 44. Hoheisel, H. P.: Medizinische, No. 12: 537, 1959.
- 45. Haug, J. O., and Kolsto, F. Nord med., 60: 1789, 1958.
- 46. West, E. D., and Dally, P. J.: Brit. M. J., No. 5136: 1491, 1959.
- 47 Kielholz, P.: Canad. Psychiat. Ass. J., 4: S129, 1959.
- 48. Randall, L. O., and Bagdon, R. E.: Dis. Nerv. Syst., 19: 539, 1958.
- 49. Discussion: Dis. Nerv. Syst., 19: 548, 1958.
  - 50. Thal, N.: Dis. Nerv. Syst., 20: 3, 1959.
- 51. Azima, H.: Dis. Nerv. Syst., 19: 523, 1958.
- 52. Ivanov, V.: Psychiatria,  $13\epsilon$ : 380, 1958.
- 53. Martin, P., Levy, A., Minvielle, J., Risacher, D., and Birouste, M. J.: Presse Méd., 67: 461, 1959.

- 54. Tuteur, W., Stiller, R., and Glotzer, J.: Illinois M. J., 116: 9, 1959.
- 55. Fleming, B. G., Spencer, A. M., and Whitelaw, E. M.: J. Ment. Sc., **105**: 349, 1959.
- 56. Gilmore, T. H., and Shatin, L.: J. ment. Sci.,  $105:508,\ 1959.$
- 57. Kvirikadze, V. V., and Mendeleeva, M. A.: Zhurn. Nevropat. Psikhiat., **59**: 575, 1959.
- 58. Roth, F. E., Irwin, S., Eckhardt, E., Tabachnik, I. I., and Govier, W. M.: Arch. internat. pharm. dyn., 118: 375, 1959.
- 59. Arrigoni-Martelli, E., and Kramer, M.: Minerva med., 49: 2007, 1958.
- 60. Darling, H. F.: Dis. Nerv. Syst., 19: 428, 1958.
- 61. Bordeleau, J. M., and Gratton, L.: Union méd. Canada, 88: 855, 1959.
- 62. Payne, P.: Canad. M. Ass. J., 81: 42, 1959.
- 63. Macdonald, R., and Shields Watts, T. P.: Brit. M. J., 1: 549, 1959.
- 64. Bordeleau, J. M., and Gratton, L.: Union méd. Canada, 87: 1552, 1958.
- 65. Goldman, D.: In Trifluoperazine: Clinical and Pharmacological Aspects. Philadelphia: Lea and Febiger, 1958, pp. 71-86.
- 66. Gearren, J. B.: Dis. Nerv. Syst., 20: 66, 1959.
- 67. Darling, H. F.: Dis. Nerv. Syst., 20: 167, 1959.
- 68. Rinaldi, F., Costa, E., Rudy, L. H., Himwich, H. E., Tuteur, W., and Glotzer, J.: Biol. Psychiatry, 1: 292, 1959.
- 69. Hanlon, T. E., Kurland, A. A., Esquibel, A. J., and Ota, K. Y.: J. Nerv. Ment. Dis., 127: 17, 1958.
- 70. O'Brien, C. F., and Anderson, C. W.: J. Louisiana M. Soc., 111: 16, 1959.
- 71. Walsh, G. P., Walton, D., and Black, D. A.: J. Ment. Sc., **105**: 199, 1959.
- 72. Winkelman, N. W.: Dis. Nerv. Syst., 20: 27, 1959.
- 73. Rothstein, C., and Lacerva, S. P.: J. Maine M. Ass., 50: 4, 1959.
- 74. Holman, W. T.: Dis. Nerv. Syst., 19: 309, 1958.
- 75. Massonnat, J., and Arroyo, H.: Presse Méd., **66**: 963, 1958.
- 76. Kinross-Wright, V. J., and Morrison, S. B.: J. Clin. Exp. Psychopath., 19: 219, 1958.
- 77. Schäpperle, O., and Schindewolf, G.: Nervenarzt., 30: 33, 1959.
- 78. Robertson, R. B.: Mil. M., **123**: 108, 1958.
- 79. Erwin, H. J.: J. nat. med. Ass., **50**: 338, 1958.

- 80. Deberdt, R.: Acta neur. psychiat. belg., 58: 934, 1958.
- 81. Divry, P., Bobon, J., and Collard, J.: Acta neur. psychiat. belg., 59: 325, 1959.
- 82. Deshaies, G., Lanteri-Laura, G., and Fargeon, A.: Ann. Méd. Psychol., 116: 965, 1958.
- 83. Gurtler, Soos and Haumonte: Ann. Méd. Psychol., 116: 980, 1958.
- 84. Burner, M., Kaufmann, R. Z., and Plancherel, A. C.: Schweiz. med. Wschr., 88: 979, 1958.
- 85. Edisen, C. B., and Samuels, A. S.: A.M.A. Arch. Neurol. & Psychiat., 80: 481, 1958.
- 86. Ferrand, P. T.: Minnesota M., 41: 853, 1958.
- 87. Delay, J., Deniker, P., Robert, R., Beek, H., Barande, R., and Eurieult, M.: Presse Méd., 67: 123, 1959.
- 88. Delay, J., Deniker, P., Robert, R., Beek, H., Barande, R., and Eurieult, M.: Presse Méd., 67: 201, 1959
- 89. Cahn, J., Georges, G., and Pierre, R.: C. rend. Soc. biol., 151: 2079, 1957.
- 90. Antonini, M., and Maniori, E.: Riv. sper. freniat., 82: 997, 1958.
- 91. Haug, J. O.: Tskr. Norske laegeforen, 79: 317, 1959.
- 92. Delay, J., Pichot, P., Lempérière, T., and Elissalde, B.: Ann. méd.-psychol., 1: 724, 1959.
  - 93. Sauter, R.: Praxis, 48: 140, 1959.
- 94. Remy, M.: Schweiz. med. Wschr., 88: 1221, 1958.
- 95. Brunold, H.: Ther. Umschau, 16: 90, 1959.
- 96. Armbruster, W., and Pulver, M.: Ther. Umschau, 16: 161, 1959.
- 97. Kinross-Wright, J.: J.A.M.A., 170: 1283, 1959.
- 98. Schram, W. S.: Dis. Nerv. Syst., 20: 126, 1959.
- 99. Ferguson, J. T., and Allin, T. G., Jr.: J. Clin. Exp. Psychopath., **20**: 14, 1959.
- 100. Christe, P.: Schweiz. med. Wschr., 88: 1164, 1958.
- 101. Weil, J., Bernfeld, J., and Rosenblum, E.: Arch. fr. pédiat., 16: 185, 1959.
- 102. Weil, J., Bernfeld, J., and Rosenblum, E.: Presse méd., 66: 1341, 1958.
- 103. Divry, P., Bobon, J., Collard, J., Pinchard, A., and Nols, E.: Acta Neurol. et Psychiat. Belg., **59**: 337, 1959.
- 104. Abood, L. G., and Meduna, L. J.: J. Nerv. and Ment. Dis., 127: 546, 1958.
- 105. Batterman, R. C., Grossman, A. J., Leifer, P., and Mouratoff, G. J.: Am. J. M. Sc., 236: 162, 1958.

106. Simon, K. W.: Med. Mschr., 13: 156, 959.

107. Zhuravleva, L. I.: Zhurn. Nevropat. Psikhiat., 59: 590, 1959.

108. Sigg, E. B.: Canad. Psychiat. Ass. J., 4: S75, 1959.

109. Hoffer, A.: Canad. Psychiat. Ass. J., 4: S118, 1959.

110. Ström-Olsen, R., and Weil-Malherbe, H.: J. Ment. Sc., 104: 696, 1958.

111. Hoffer, A., and Osmond, H.: J. Nerv. and Ment. Dis., 128: 18, 1959.

112. Van Meter, W. G., Owens, H. F., and Himwich, H. E.: Canad. Psychiat. Ass. J., 4: S113, 1959.

113. Gamboa, M. E., and Gamble, E. W.: A.M.A. J. Dis. Child., 97: 345, 1959.

114. Baker, J. P., and Farley, J. D.: Brit. M. J., 2: 1390, 1958.

115. Miller, J. J., Schwarz, H. H., and Forrer, G. R.: J. Clin. Exp. Psychopath., 19: 312, 1958

116. Flügel, F.: Nervenarzt, 30: 241, 1959.

117. Büssow, H.: Nervenarzt, **30**: 36, 1959.

118. Fouks, Lainé, Ferrant, and Pagot: Ann. méd.-psychol., Par., 1: 171, 1959.

119. Stern, P.: Wien. Ztschr. Nervenh., 14: 311, 1958.

120. Shaw, E. B., Dermott, R. V., Lee, R., and Burbridge, T. N.: Pediatrics, 23: 485, 1959.

121. Schou, J.: Ugeskr. laeger, 121: 649, 1959.

122. Bruns, W. T.: Wisconsin M. J., 58: 356, 1959.

123. Burbridge, R.: Pennsylvania M. J., 61: 999, 1958.

124. Simon, J. L.: J. Louisiana M. Soc., 110: 196, 1958.

125. Fiore, J. M., and Noonan, F. M.: N. . England J. M., 260: 375, 1959.

126. Kaplan, N. M.: A.M.A. Arcl. Int. M., · 103: 219, 1959.

127. Conchubhair, S. U.: J. Irish M. Ass., 44: 117, 1959.

128. Michaelson, A. K.: J. Florida M. Ass., 45: 1418, 1959.

129. Pisciotta, A. V., Ebbe, S., Lennon, E. J., Metzger, G. O., and Madison, F. W.: Am. J. Med., 25: 210, 1958.

130. Grahmann, H., and Suchenwirth, R.: Nervenarzt, 30: 224, 1959.

131. Preston, J.: Am. Practitioner. 10: 647, 1959.

132. Heising, G., and Hubach, E.: Nervenarzt, 30: 37, 1959.

133. Graft, T. D., and Gentry, W. D.: J.A.M.A., 169: 834, 1959.

134. Nevzorova, T. A.: Zh. nevzopat. psi-khiat., 59: 160, 1959.

135. Aleksaniants, R. A.: Zh. nevropat. psi-khiat., **59**: 167, 1959.

136. Gratsianskii, A. A.: Zh. nevropat. psi-khiat., **59**: 172, 1959.

137. Vartanian, M. E.: Zhurr. nevropat. psikhiat., **59**: 586, 1959.

138. Stevens, J. D., and Dunn, A. L.: Dis. Nerv. Syst., 19: 338, 1958.

139. Danziger, L.: Dis. Nerv. Syst, 19: 373, 1958.

# **PSYCHOSURGERY**

### WALTER FREEMAN, M.D., Ph.D.<sup>1</sup>

Apparently no group of patients are as grateful to their physicians as those who have had relief of their symptoms through frontal lobe surgery. Ordinary process of follow-up seems largely unnecessary with this group because about 90% either write to us regularly, telephone or report back to the hospital from as far away as Texas and Arkansas. Questionnaires always get a total response and several patients have spontaneously volunteered to talk to prospective surgical candidates . . . We consider this continued friendliness and desire to maintain contact long after leaving the hospital to be a most gratifying result of the

191 Main St., Los Altos, Calif.

procedure. The well-known habit of the former patient snubbing his psychiatrist in public does not seem to prevail here. Perhaps this pleasant reversal of form has increased our enthusiasm for this therapeutic procedure.

The above quotation from the paper by Slocum, Bennett and Pool (23) epitomizes the social results of lobotomy in patients with chronic anxiety states.

Lobotomy is specific for uncontrollable anxiety. In ordinary patients anxiety can be more or less suppressed by drugs, but as Alexander(1) states, lobotomy is "sometimes the only one that can resolve the

illness in truly despérate treatment-resistant cases." Fear and worry are listed by Greenblatt(9) as coming under control in a high percentage of cases. Slocum et al. (23) state further that: "In all of these 18 patients the sole aim of surgery was to give the patient relief from severely disabling anxiety and break up the concomitant tension." They describe the agonizing suffering before operation and the remarkable improvement after operation: sleep without sedation, a full diet, healing of ulcerative colitis and tuberculosis, control of hypertension, even relief of asthma and hav fever. Of the 13 patients who were not psychotic, 12 returned to a well-adjusted independent existence at home without further hospitalization or continuation of therapy. Far from being damaged by surgery the patients resumed their life patterns with ability that had usually been lost months and sometimes years prior to operation. The patients explained this by the fact that their minds, free of self-recrimination, anxiety and fear, could return to normal function. Sagebiel (21) agrees: "Anxiety, in all its various manifestations, should be the main criterion for determining the selection of patients."

The reverse side of the medal is revealed in several well-controlled studies on chronic patients. Robin, in three papers (18, 19, 20) and Ball et al. (2), working with Veterans Administration patients, conclude that lobotomy makes little difference in the eventual outcome.

In Ball's study 185 patients were operated upon and compared with a control group of 185 patients comparable in age, diagnosis and length of illness. Evaluation by rating scales was made over a period of 5 years. "Discharge rates for the standard and bimedial groups increased each year after operation and were significantly higher than that of the controls by the fourth year. The community adjustment of these discharged patients, although below average to marginal, was rated as better for those who had been lobotomized than for the controls." The tranquilizing drugs, introduced during the third year of this study, had more beneficial results upon the control patients than upon the operated ones.

Robin(18) compared 198 leucotomized patients with 198 closely matched controls.

Leucotomy did not improve chances of discharge nor accelerate it; it did not reduce the chances of readmission nor delay it, nor reduce the number of readmissions, nor the total period of readmission; it did not improve hospital behavior as judged by ward level, nor increase the death rate. A second leucotomy did not improve prospects of discharge as compared with the controls.

It would almost be safe to conclude that lobotomy is of little value in the psychoses were it not for a study by Barahal(3) on 1,095 patients (90% schizophrenics), nearly half of them hospitalized for more than 5 years. Five to 10 years later 16% were at home as contrasted with 2% of the controls, that is, patients who were recommended for lobotomy but for whom permission could not be obtained. In the 5-year-plus group of operated patients only 6% were discharged, as contrasted with 44% operated upon during the first year of hospitalization, 38% the second year and 23% in the years 2 to 5. Chronicity is thus shown to be the outstanding factor in the failure of psychosurgery, at least in schizophrenia. Boyd et al.(4) describe the therapeutic value of lobotomy on the disturbed wards of a mental hospital, but these figures are no better than those obtained by drugs. Smith and Kinder (24) restudied the Rockland topectomy patients 8 years later and found progressive downgrading when compared with their controls. Superior topectomy produced greater losses then orbital resections. Discriminatory capacity was most markedly reduced.

Hirose(10) followed 280 schizophrenics from 2 to 11 years after a variety of operative procedures. Two-thirds were improved, half of these discharged. He theorizes that changing the patterns of psychologic reactions to the underlying biologic conditions makes rehabilitation possible. Polonio (17) advances theories to explain the alteration in psychotic ideation and behavior that underlies the improvement. Proper choice of patients results in 75% recovery. Sainz(22), with tongue in cheek: "No, the leucotome, long, rounded, sharp, and of virile steel, could well represent an apotheosic phallus, deeply thrust into the very entrails of the brain, satisfying all basic homosexual urges of the patient in a veritable explosion of libido."

Kalinowsky(12) believes that patients with chronic depressions that do not respond to ECT are excellent candidates for psychosurgery. "In this group pharmacotherapy will be tried but is not the answer because too many different symptoms occur requiring different medication and also because these patients are often quite sensitive to side effects of the drugs, and side effects are particularly disturbing to them."

Robin's (19) negligible results in patients with affective disorders are so out of line with the findings of other investigators as to cast doubt upon the efficacy of the surgery. In a symposium (5) in London, McKissock said that the experimental period was past.

There has been a striking change in the type of clinical case referred for operation . . . This has been reflected in the marked diminution in the number of deteriorated schizophrenics offered for surgery [and] a corresponding increase in the number of patients suffering from symptoms of anxiety, tension, agitation and depression who have failed to respond to all the other accepted forms of treatment.

Referring to 170 leucotomies he performed at one mental hospital, mostly with rostral incisions, he found 60% working, 30% home and only 10% in hospital.

To sum up, rostral leucotomy has proved itself to be a form of treatment carrying a very low risk of life—less than 1%. It produces remarkably little undesirable side-effect and, when used in properly selected cases, chosen by experienced psychiatrists, offers a high rate of recovery.

Knight, whose incisions were made in the lower medial quadrants in 200 patients, achieved 117 recoveries and only 19 failures. "These patients are warm and normal emotionally, and many letters from relatives emphasize the entirely normal life and reaction of the patients after operation." Partridge followed 89 of his original patients 10 to 12 years later. Half of them were continuously out of the hospital. Recurrences of affective disorders were milder. The 7 obsessionals, previously totally incapacitated, had been able to lead an approximately normal life without relapse. Elithorn found significant differences be-

tween endogenous and reactive depressives, the former responding much better. Only one patient suffering from an endogenous illness regretted having a leucotomy. Of the reactive depressives 8 regretted the operation and 9 were neither glad nor sorry." Of the 105 cases only 14 were regarded by the author as failurs:

Psychophysiologic reactions in 67 postlobotomy patients are analyzed by Franks et al.(7), revealing a notable loss of symptoms, consequent upon the recutton in anxiety.

Further studies upon interruption of frontal pathways by non-cutting m∋thods are reported by Larsson et al. 13' with the proton beam, Lindstrom (14) with ultrasound and Jaeger (11) with hot water injection. The pathologic findings in 25 patients dying at varying periods are ultrasonic irradiation for relief of suffering in terminal malignancy are reported by Nelson, Lindstrom and Haymaker (16). Leaving the dura unopened spares the cortex. The lesions in the white matter are sharply circumscribed, purely necrotic, with little reaction, and their extent is dependent upon the time and energy of the application. The location of the major lesions is variable. Fiamberti (6) brings up to date the Italian bibliography on transorbital lebotomy, 57 references. Freeman(8) surveys the field of psychosurgery in The American Handbook of Psychiatry. A biographic sketch of Burckhardt (1836-1907), the Swiss pioneer in topectomy, is given by Müller (15).

### **BIBLIOGRAPHY**

- 1. Alexander, L.: Dis. Nerv. System, 20: 75, May 1959.
- 2. Ball, J., Klett, C. J., and Gresock, C. J.: J. Clin. & Exper. Psychopath., 20: 205, July-Sept. 1959.
- 3. Barahal, H. S.: Psychiat. Ç., 32: 653, Oct. 1958.
- 4. Boyd, B. A., Weber, W. F., and Mc-Kenzie, K. G.: Canad. Psychiat. Assoc. J., 3: 170, Oct. 1958.
- 5. Elithorn, A., et al.: Proc. R. Soc. M. Lond., 52: 203, Mar. 1959.
- 6. Fiamberti, A. M.: Minerva med., Tor., 49: 3794, Oct. 6, 1959.
- 7. Franks, J., Haslerud, G. M., Niswander, G. D., and Casey, T. M.: AMA Arch Neurol. & Psychiat., 81: 227, Feb. 1959.

- 8. Freeman, W.: Psychosurgery. In Arieti, S., ed.: American Handbook of Psychiatry. New York: Basic Books, pp. 1521-1540, 1959.
- 9. Greenblatt, M.: Am. J. Psychiat., 116: 193, Sept. 1959.
- Hirose, S.: Psychiat. et Neurol. Japon, .60: 1341, Dec. 1958.
- 11. Jaeger, R.: AMA Arch. Neurol., 1: 337, Sept. 1959.
- 12. Kalinowsky, L. B.: Canad. Psychiat. A. J., 4 Suppl.: 138, 1959.
- 13. Larsson, B., Leksell, L., Rexed, B., Sourander, P., Mair, W., and Andersson, B.: Nature, Lond., 182: 1222, Nov. 1, 1958.
- 14. Lindstrom, P.: Prefrontal ultrasonic irradiation, Harvey Cushing Soc. abst. *in* Medical News, May 1959.
- 15. Müller, C.: Rev. méd. Suisse rom., 78: 726, Nov. 1958.

- 16. Nelson, E., Lindstrom, P. A., and Haymaker, W.: J. Neuropath. Exper. Neurol., 18: 489, Oct. 1959.
- 17. Polonio, P: II Internat. Congr. Psychiat., I: 268, 1957.
- 18. Robin, A. A.: J. Neurol., Lond., 21: 267, Nov. 1958.
- 19. Robin, A. A.: J. Neurol., Lond., **22**: 132, May 1959.
- 20. Robin, A. A.: J. Ment. Sc., **104**: 1025, Oct. 1958.
- Sagebiel, L.: Ohio State M. J., 497, Apr. 1959.
- 22. Sainz, A.: Dis. Nerv. System, 20: 53, May 1959.
- 23. Slocum, J., Bennett, C. L., and Pool, J. L.: Am. J. Psychiat., 116: 222, Sept. 1959.
- 24. Smith, A., and Kinder, E. F.: Science, 129: 149, Jan. 16, 1959.

# CHILD PSYCHIATRY; MENTAL DEFICIENCY

### LEON EISENBERG, M.D.1

In keeping with the practice established last year in this section, comment will be limited to a few contemporary developments in order to permit at least brief critical appraisal.

## CHILD PSYCHIATRY

The most noteworthy administrative event of the year has been the establishment of subspecialty certification in child psychiatry (1). The requirement of 4 years of psychiatric training (2 of which are to be spent in working with children) and the encouragement of pediatric training (acceptable in lieu of additional psychiatric experience) can be expected to have a decided impact upon the entire field, with a reemphasis on the medical foundation of pediatric psychiatry. The composition of the Committee on Child Psychiatry and its early actions give promise that an elevation of standards may be achieved without the much-to-be-feared corollary of freezing training programs into repetitive sterotypes. Child psychiatry, legitimatized less than 3 decades ago, has now come of age. The distance travelled has been epitomized by the author of the first American textbook (1935) to bear the title: Child Psychiatry.

Leo Kanner, now Professor Emeritus at the Johns Hopkins University, has identified the main currents and the tributaries in the history of child psychiatry at the Maudsley (2) and Horney(3) Lectureships. In these scholarly articles he has developed the meaning of the present in the perspective of the past, an undertaking peculiarly fitted to this year of the official designation of the rites de passage to full specialist status.

In a theoretical paper of considerable importance, Bowlby(4) has presented a critique of hitherto available conceptual models on the development of the child's tie to his mother. Freud, hampered by the lack of systematic observations on infant behavior and, on his own admission, by the intensity of the father transference of his female patients, underestimated, at least until late in his career, the strength and importance of the infant's early relationship to his mother. Viewing this first object choice as derivative from the reduction of oral tension, Freud ascribed to it no more than a transitional role in the ontogeny of essentially auterotic impulses, which only later converged upon the parent of opposite sex. Child analysts, in disregard of their own insightful clinical observations, continued to subscribe to the classical Freudian

<sup>1</sup> Johns Hopkins Hospital, Baltimore 5, Md.

view of the anaclitic basis of the earliest object choice.

Bowlby, with somewhat uncomfortable apologies for his heresy, synthesizes notions borrowed from Piaget and from the ethnologists with his own studies on the consequences of maternal deprivation to present a theory of "component instinctual responses." He describes 5 (but acknowledges that there may be more) inborn behavior patterns: sucking, clinging, following, crying, and smiling; each more or less independent and maturing at its own rate, but becoming integrated and focused upon the mothering person in the normal course of development. "Instinct" in his sense is' not drive or motivating force (an unfortunate concept resulting from the mistranslation of "Trieb") but rather built-in species -determined behavior, released or suppressed by appropriate "sign-stimuli" from the environment and by interoceptive signals from within the infant organism. This family of behavior items is conceived as having evolved because of biologic survival value for the newborn. A necessary distinction is drawn between early responses, which are simple functions of fragmentary perceptions in an infant without a differentiated consciousness of self, and the gradual elaboration of a "monotropic" attachment to a mother perceived as a person existing in time and space with a history and individuality of her own (some time toward the end of the first year). Drawing upon anthropoid data, Bowlby argues for the importance of complementary maternal instincts, but here his development is less convincing. One need not deny the likelihood that phylogenetic mechanisms passed on from primate ancestors are present in the human mother in order to contend that they are of minimal importance as contrasted with role of culturally elaborated expectancies in determining her maternal behavior.

Bowlby's insistence upon the independence of the separate components of the infant's instinctual repertoire and his revision downward of the importance of sucking as the basis for attachment to the mother have received striking confirmation in Harlow's studies with infant macaques (5-7). In an ingenious experimental design,

Harlow reared isolated infant macaques with "mother surrogates" consisting of either wire or terry cloth dummies, with or without an artificial "breast" to permit nursing. To summarize his findings, the infant monkeys much preferred the terry cloth figure, whether or not it was the source of milk, apparently because of cutaneous and kinesthetic contact sensations. The attachment to the terry cloth "mother surrogate" was remarkably persistent; when it was available, the infant retreated to it in the face of novel or threatening situations and was then enabled to resume exploratory behavior, as contrasted with the cowering and timorous reaction to the same stimuli in its absence. Experiments in progress appear to demonstrate preferential attachment for dunmies that permit "clinging contact" rathe: than mere contact and still more to those that rock back and forth. Details aside, these studies indicate that, at least in the macaque, the infant's attachment to his mother is only minimally related to her rursing role and far more to her function as an object to which the infant clings. This serves to emphasize the importance of the activity of the infant in the process of forming a relationship as contrasted with earlier stress upon the neonate solely as a passive recipient. A word of caution is necessary: The capacity for clinging is highly developed in the infant primate for whom it is essential to survival in an arborea existence; it may constitute a more significant factor in mother-attachment in such animals than it does in man.

Bowlby's views do not resolve all of the issues in the genesis of social behavior. The supporting data rely heavily upon analogy with subhuman behavior; the role of learning is so much more critical in our species than in others that caution is indicated in the translation into human terms from animal experiments, however ingenious. Nonetheless, the great virtue of Bowlby's conceptual model lies in the possibility it presents for experimental analysis in contrast to mere romanticism or misanthropy in interpreting pre-verbal stages of infant development.

The necessity for a careful reappraisal of current clinic practices is evident from two

studies published in the past year. Tuckman and Lavell(8), in a survey of 1,548 outpatient admissions to 11 child guidance clinics in Philadelphia, found that, overall, • 59% were patient-terminated, with a strong indication that those families most in need of help were the least likely to complete the treatment process. Equally significant was the finding that attrition rates varied from a low of 26% to a high of 71% at individual clinics; one wonders to what extent differences in type of referral, screening procedures, waiting periods and therapeutic philosophies account for this very sizable variation. Nonetheless, the figures imply an intolerable waste of professional time in the face of the nationwide scarcity of services(9). At the same time, Levitt *et al.* (10) were unable to demonstrate any consistent difference on a number of measures of adjustment between treated and untreated patients some 5 to 6 years after the time of application for psychiatric services. True, this study, despite its very considerable merits, suffers from the limitations of retrospective studies: defectors from services as "controls"; unequal moieties of control and experimental groups lost to follow-up; the unknown therapeutic impact of the diagnostic process on the "controls"(11). Everyday clinical practice is based on the conviction that therapeutic intervention does make a difference; yet this study, like its predecessors (12), challenges the essence of that conviction. How can we account for this disenchanting set of findings? Are the wrong variables being measured so that benefit eludes our net? Is the rate of spontaneous recovery so high as to preclude the statistical demonstration of any but superlatively effective treatment results? Or may the failure lie in the amalgamation of patients from heterogeneous diagnostic categories, in certain of which treatment may be related to outcome and in others of which it is without bearing, either because the disturbance is self-reparative or because it is beyond response to available therapeutic modalities? That this last factor may be relevant is indicated by studies of long term prognosis (13) and of short term response(14) in relation to diagnostic grouping. The time is long past for a critical reexamination of traditional

practice in order to learn to specify who is to be treated, by what method and for how long.

### MENTAL DEFICIENCY

Mental deficiency, once the step-child of medicine, a waste basket of heterogeneous disorders possessing in common only the one feature of low intelligence, has become an exciting area of biochemical and genetic research. The central idea behind the resurgence of interest can be traced to Garrod's concept of inborn errors of metabolism (15), which have grown from the 4 he recognized to well over 50 under current study (16). It is now evident that the absence of, or deviant function of, a gene which controls the synthesis of an enzyme in a metabolic sequence may lead to a deficiency of the end-product of the sequence and an accumulation of an excess of intermediary metabolites. These, in turn, may have mass action effects on reversible reactions, inhibit other enzymes, or may themselves be directly toxic or become toxic as they flow over auxiliary metabolic routes. The pathologic consequences of biochemical derangement may be evident (a) at birth, (b) only in the presence of specific dietary intake, or (c) at a later stage in the developmental sequence. Early identification of the biochemical defect may lead to the hope of control by elimination of particular foodstuffs, by dietary supplementation, and, in theory, by the artificial introduction of missing enzymes.

As examples of recently uncovered metabolic defects associated with mental deficiency, the following may be cited: Hartnup disease, a disorder of tryptophan metabolism clinically similar to pellagra but stemming from a failure in synthesis of the apoenzyme rather than from a lack of dietary niacinamide(17, 18); maple syrup disease, so named because of the odor of the urine which contains pathologic amounts of alpha-keto acids(19-21); and sucrosuria, a disorder associated with hiatus hernia and mental deficiency, anomalies that may be independent of one another (22, 23). Therapeutic consequences of these discoveries are yet to come. The one disorder in which the train of pathologic consequences of a genetically determined

enzymatic deficiency can be totally prevented by dietary management from infancy is, of course, galactosemia, discussed in an earlier review (24). The issue is not quite as clear, though highly promising, in phenylketonuria. Good results with a phenylalanine low diet administered from infancy have been obtained by most investigators (25, 26) but not by all (27).

During this same period, methods for the accurate determination of human chromosome number and sex chromatin patterns (28) have led to the undercovering of chromosomal abnormalities in clinical syndromes associated with mental deficiency. The presence of an extra chromosome has been demonstrated in mongolism (29). Klinefelter's syndrome (seminiferous tubule dysgenesis), frequently associated with mental deficiency, displays a discordance between chromosomal and phenotypical sex(30-31). A number of surveys of the sex chromatin patterns of males in institutions for the feebleminded have been undertaken, with a low (about 1%) but consistent finding of "positive" cases (32-35). These patients, on the basis of direct chromosome counts, appear to have XXY chromosomal constitution (36-37) and are therefore to be regarded not as genetic females but rather as chromosomal intersexes.

The nature of the relationship between the chromosome abnormality, on the one hand, and the mental defect and other evidences of psychopathology, on the other, is as yet unclear. The findings indicate that the factors which influence psychic function are considerably wider than we have recognized. At the least, these developments foretell an era of exciting research which should help to dispel any remaining inclination to regard mental deficiency as an entity and to view the syndromes as "routine."

# **BIBLIOGRAPHY**

- 1. Am. J. Psychiat., 115: 949, 1959.
- 2. Kanner, L.: Trends in Child Psychiatry. J. Ment. Sci., In Press.
- 3. ————: Centrifugal and Centripetal Forces in Personality. Am. J. Psychoanalysis., 19: 123, 1959.
- 4. Bowlby, J.: Int. J. Psychoanalysis, 39: (part V), 1958.

- 5. Harlow, H. F.: Am. Psychologist., 13: 673, 1958.

- 8. Tuckman, J. and Lavell, M.: Pub. Hlth. Reports, 74: 309, 1959.
- 9. Eisenberg, L.: Am. J. Pub. Hlth., 48: 742, 1958.
- 10. Levitt, E. E. et al.: Am. J. Orthopsychiat., 29: 337, 1959.
- 11. Eisenberg, L.: in Child Research in Psychopharmacology, S. Fisher, Ed., Springfield: C. C Thomas, 1959.
- 12. Levitt, E. E.: J. Consult. Psychol., 21: 189, 1957.
- 13. O'Neal, P., and Robins, E Am. J. Psychiat., 114: 961, 1958.
- 14. Cytryn, L. et al.: The Effectiveness of Tranquilizing Drugs Plus Supportize Psychotherapy in Treating Behavior D:sorders of Children. Am. J. Orthopsychiat. In Press.
- 15. Garrod, A. E.: Lancet, II: 1, 73, 142, 214, 1908.
  - 16. Synder, L. H.: Science, 128: 7, 1959.
- 17. Baron, D. N. et al.: Lancet II: 421, 1956.
- 18. Jepson, J. B.: Biochem. J., 64: 14, 1956.
- 19. Menkes, J. H. et al.: Pecintrics, 14: 462, 1954.
- 20. Westall, R. G. et al.: Fec. Proc., 17: 334, 1958.
- 21. Menkes, J. H.: Pediatrics, 23: 348, 1959.
- 22. Wilkinson, R. H., and Moncrieff, A.: Acta Pediatrica., 43: Suppl. 100, 495, 1954.
- 23. Moncrieff, A.: Sucrosuria. Int. Cong. Pediatrics. Montreal, 1959.
  - 24. Eisenberg, L.: J. Ped., 51: 334, 1957.
- 25. Armstrong, M. D.: Biochemical Studies on Newborn Infants with Phenylketonuria. Int. Cong. Pediatrics. Montreal, 1959.
- 26. Bickel, H.: Oligophrenia Associated with Inborn Errors of Metabolism. Int. Cong. Pediatrics. Montreal, 1959.
  - 27. Cobb, K.: Personal Communication.
  - 28. Barr, M. L.: Science, 130 679, 1959.
- 29. Jacobs, P. A. et al.: Lamet I: 710, 1959.
- 30. Bradbury, J. T. et al.: J. Clin. Endocrin. and Metab., 16: 689, 1956.
- 31. Grumbach, M. M. et al.: Ibid., 17: 703, 1957.
- 32. Ferguson-Smith, M. A.: Lancet, 1: 928, 1958.
- 33. Prader, V. A. et al.: Schweiz. Med. Wschr., 88: 917, 1958.

34. Fergusor.-Smith, M. A.: Lancet I: 219, 1959

35. Mosier, H. D. et al.: A Study of the Incidence of the Female Sex Chromatin Pattern and Associated Clinical Features in

Males with Mental Deficiency. Int. Cong. Pediatrics. Montreal, 1959.

36. Jacobs, P. A., and Strong, J. A.: Nature, 183: 302, 1959.

37. Ford, C. E. et al.: Lancet I: 709, 1959.

# OCCUPATIONAL PSYCHIATRY 1

RALPH T. COLLINS, M.D., MED.Sc.D.2

#### INTRODUCTION

Interest in occupational psychiatry continues to grow. An editorial in the New York Times(1) points out that a recent mental health forum urged that companies set up mental health centers and employ psychiatrists in the same way that they now have hospital facilities and employ physicians. Another indication of the increasing awareness of the importance of mental health problems in industry was the recent annual conference of industrial executives and industrial physicians at Lake Logan, North Carolina, which this year focussed on industrial mental health. A survey (2) by the APA Committee on Occupational Psychiatry reveals that about 200 psychiatrists are currently functioning in some consulting capacity to industry. The National Health Council's forum in Chicago on occupational health devoted two afternoon sessions to mental health in industry. One of the 5 main projects for World Mental Health year 1960 will be, "Mental Health and Developing Industrialization." Dr. Roger Tredgold, of University College Hospital, London, will act as the principal coordinator for this topic. There will be an industrial psychologist from the United States and an industrial psychiatrist from Europe as the other coordinators. The project will need some 15 local country representatives to cover countries in the general areas of Asia, Africa and Latin America.

## PSYCHIATRIC PROGRAMING IN INDUSTRY

There seems to be a growing interest in industry for some sort of psychiatric programing. A recent report by McLean(3) notes that at least 8 corporations employ fulltime psychiatrists and that about 200 companies are using psychiatrists on a parttime basis. He believes that the industrial psychiatrist's main function is to stimulate mental health rather than treat mental illness. The industrial psychiatrist engages in clinical activities, mental health education for management, and in research. A study of long-term incapacity by Henderson et al.(4) emphasizes that the main causes of incapacity which accounted for 70% of the total were mental illness.

### ALCOHOLISM

Alcoholism continues to be a concern of industry. Thorpe and Perret(5) reporting on a study of 278 problem drinkers known to an industrial medical department revealed that medical, psychiatric measures, Alcoholics Anonymous, or a combination of any of these resulted in an improvement in 60-65% of the cases. Another study(6) of absenteeism, accidents and sickness payments in alcoholics reveals that the problem drinkers were absent 2.5 as many days, cost 3 times as much in sickness payments, and had 3.6 times as many accidents as matched controls. Turfboer(7) reports on an inplant program for the rehabilitation of alcoholics in an oil refinery on a Caribbean Island. Parr(8) makes a plea for recognition of "incipient addicts" among drinkers or at least to warn them of the risk they are running. D'Alonzo(9) of the Dupont Company has written a book entitled The Drinking Problem and Its Control, which describes an experimental plan for the rehabilitation of alcoholics at that company. In this plan a deliberate effort was made to seek out the alcoholics. More than one-half of the cases were said to have been rehabilitated and another 20% were improved.

<sup>&</sup>lt;sup>1</sup> Appreciation is due the other members of the Committee on Occupational Psychiatry, APA, and American and foreign correspondents.

<sup>&</sup>lt;sup>2</sup> 343 State Street, Rochester 4, New York.

## SPECIFIC SYNDROMES

A review of the literature reveals that some specific problems have been receiving attention among physicians and psychiatrists working in industry. Mortinsen et al. (10), for example, report on the mortality due to coronary disease according to broad occupational groups. Beaumont(11), Edwards(12) and Hill(13) discuss problems related to epileptics in industry. The last author points out that the great majority of patients with epilepsy are psychologically normal people and with the exception of the avoidance of obvious hazards, there should be no restrictions placed on their lives. Gordon(14) discusses the problem of chronic low back pain and the influence of favorable personality factors in the ability of cases with low back pain to return to work.

## **JOURNALS**

During the past year, the Journal of Occupational Medicine was introduced. One of the regular departments in this journal concerns itself with abstracts of the current literature on mental health. This feature is written by Graham Taylor.

### FOREIGN REPORTS

Dr. M. R. vanAlphen de Veer(15), Director Social Affairs (Medical Department) Philips, N. V. Philips' Gloeilampenfabrieken, Eindhoven, Nederland reports that on November 19, there will be at the Philips' Glow Lamp Works a symposium on Mental Health in Industry. The state of affairs of mental health in industry in Holland will be chiefly discussed. Two social psychologists will read a paper dealing with the worker, whereas another industrial psychologist and an industrial physician will deal with the problem from the side of the work.

Dr. vanAlphen de Veer mentioned in his letter to me the following books which have been recently published, viz:

- 1. De Geestelijke Gezondheidszorg in Nederland (Mental Health Care in the Netherlands) by Dr. C. J. B. J. Trimbos in which mental health in industry is also dealt with.
- 2. Verzuimgeneigdheid bij dienstplichtige militairen in vrede's tijd (Absenteeism

with soldiers in times of peace) by J. A. C. de Kock van Leeuwen.

- 3. De Geestelijke Stabiliteit (Mental Stability considered under Military Conditions) by Dr. L. Th. H. S. Kortbeek. Dr. van Alphen de Veer states, "this book might also be of interest for industrial psychiatry because it contains a very fundamental study of mental stability in all its consequence."
- 4. Samenleving in een technische tijd (Society in a Technical Time) by Prof. Dr. I. F. Ph. A. Tellegen.
- 5. Beeld en Werkelijkheid van de Twents-Achterhoekse Textielindustrie (The Reality of the Textile Industry in a certain part of the Netherlands) by Th. J. Ijzerman.

Dr. Roger F. Tredgold(16) of London was requested by the federal government of Yugoslavia and by WHO to visit Yugoslavia as a consultant in the field of mental health in industry. His full report was submitted to WHO but a shorter report was published in the last issue of World Mental Health, the quarterly Journal of the World Federation for Mental Health. It is titled "Industrial Psychiatry in Yugoslavia." He made the following points, viz:

- 1. Because of the inspiration and imagination of Dr. Olga Macek, services, which in fact amount to simple psychotherapy on a wide, but necessarily superficial scale, were set up by various industrial doctors in Croatia, notably in Zagreb and Split.
- 2. In Split, where new industries are arising, each of 10 doctors under Dr. Stipisic has a "Mental Hygiene" room in his surgery, where he can see patients alone, at leisure. Each has had postgraduate psychiatric training and is doing psychotherapy.
- 3. All those persons he saw in Yugoslavia agreed that neurosis was increasing because, viz: 1. Of a changeover from agricultural life. 2. Of bad housing. 3. Of already existing organic disease which might itself be due to nutritional deficiency or hormonal imbalance, or dust in the environment (asthma) but which was badly treated by doctors with no knowledge of psychiatry, and thus became chronic.
- 4. Local psychiatrists, experienced in group discussion, join the meetings of industrial physicians and help in training programs for managers.

- 5. Although highly organized and competent, industry in Slovenia has fostered mostly physical medicine, but a pattern of counseling and "emotional first aid" is developing.
- 6. In Serbia, there is much interest and work in general mental health and in mental illness and health in industry. Group discussions are developed for managers and workers to work out their problems.
- 7. Alcoholism is a major problem in Yugoslavia. In one firm there was a correlation between chronic alcoholics and the "accident prone" which suggested that the same type of person might show either (or both) syndromes.

Dr. Tredgold in his letter to me stated the following,

I think it would be fair to say that there is a steady increase of general interest in the field of industrial psychiatry although actual work going on-in clinical practice, research or teaching-depends mostly on a few individuals' initiative in each country. In some cases these are industrial psychologists, in some, sociologists, in some, psychiatrists. Besides this there is certainly some pressure from managers to include psychology or psychiatry in their management training courses which are themselves very much on the increase in Britain. I believe that the trade-unionists are somewhat suspicious of this development on the grounds that they think the management is using "human relations" as a smoke screen to avoid discussing more serious problems, e.g. wages. This is indeed tragic as I believe that psychiatrists have it in their power to help the trade-unionists as much as they can help the management.

At the Annual Meeting of the World Federation for Mental Health held in Barcelona, Spain, in September, a day was given up to the discussion of problems concerning mental health in industry and a working party of some twenty people was formed to discuss this subject throughout the week. Various plans and proposals were made but their implementation, I am afraid, is much hampered by the lack of finance in this field.

Dr. B. Markovic (17), Central Institute of Hygiene, Zagreb, reports he is teaching 4 small groups of industrial doctors (totaling 45) the theory and practice of group techniques.

Dr. M. Hausner (18), Prague, Czecho-

slovakia stated the following facts in a letter:

1. All medical care in Czechoslovakia is entirely free of charge for the patient including hospitalization and drugs.

- 2. In large concerns, there are staff National Health Centers which have their own neurologist and psychiatrist working for them every week on a part-time plan at least. In small concerns with no specialists, the mental patients are sent to the District Medical Psychiatric Institutions.
- 3. The Faculty of Hygiene at the University in Prague has a psychiatric chair which sees its main task in studying the mental occupational distortions, in particular of a toxic nature.
- 4. Working rehabilitation centers for chronic psychotic patients exist. Persons with decreased working ability due to psychiatric defects are cared for by a special committee and suitable work is found.

#### TRAINING

The National Association for Mental Health has conducted 4 regional training institutes on mental health in business and industry in New Haven, Portland, Milwaukee and New Orleans during this year. Each institute is directed by Harry Levinson, Ph.D., director of industrial mental health for the Menninger Foundation, assisted by local psychiatrists and psychologists. Each institute focuses on the practical application of psychiatric knowledge to human relations in business and industry.

The Division of Mental Health in Industry, Menninger Foundation continues to hold separate training programs for occupational physicians and for executives.

The American Management Association at its Academy of Advanced Management, Saranac Lake, N. Y. has developed lectures on human relations in business and industry and on executive mental health for business and government executives.

Various educational institutions throughout the United States and Canada have held institutes on mental health in industry for management people.

## REHABILITATION

The Executive Committee of the President's Committee on Employment of the

Physically Handicapped recently passed the following resolution,

The Executive Committee, noting the growing importance of the employment of persons with histories of emotional or behavior problems requiring special placement efforts, and further noting steps being taken by State Committees, hereby endorses an immediate and detailed study of the problem of incorporating promotional responsibilities for aiding the employment of such persons.

As a result of this resolution, Dr. Ralph T. Collins, a member of the Medical Committee of the President's Committee, was asked to chair a subcommittee of the Medical Committee to make specific recommendations as to how best to carry out the intent and principles of the Executive Committee's Resolution.

In New York State, Governor Nelson A. Rockefeller recently appointed Dr. Ralph T. Collins to the Governor's Council on Rehabilitation. Dr. Collins will represent neurology and psychiatry on the 9-man council.

### BIBLIOGRAPHY

- 1. Editorial, Mental Health in Industry, New York Times, Oct. 18, 1959.
- 2. Survey, Committee on Occupational Psychiatry, American Psychiatric Association.
- 3. McLean, Alan A.: Think, p. 8, March 1959 (Ind. Hyg. Dig. #862/59).

- 4. Henderson, W. K., Walter, D. E., and Wilson, J. F.: Bull. of Hygiene, 34: 48, Jan. 1959 (Health Bulletin 1958, October, V 16, No. 4, 68-74).
- 5. Thorpe, J. J., and Perret, J. T.: A.A.A. Arch. of Indust. Health, 19: 24, Jan. 1959 (Ind. Hyg. Dig. #159/59).
- 6. Observer and Maxwell, Milton A.: Quart. J. Studies on Alcohol, 20: 302, June 1983.
- 7. Turfboer, R.: Med. Bull. (Std. Oil N. J.), 19: 108, March 1959 (Ind. Hyg. Dig. #544/59).
- 8. Parr, D.: Trans. Assn. Ind. Med. Off. 2ers, 9: 65, July 1959.
- 9. D'Alonzo, C. A.: The Drinking Problem and Its Control, Houston Tex.: Gu.f Pullishing Company, 1959.
- 10. Mortensen, J. M., Stevenson, T. T<sub>=</sub> and Whitney, L. H.: A.M.A. Arch. of Indust. Health, 19: 1, Jan. 1959 (Ind. Hyg. Dig. #161/59).
- 11. Beaumont, C.: Trans. Assn. Ind. Wed. Officers, 9: 53, July 1959 (Ind. Hyg. Dig. #998/59).
- 12. Edwards, C.: Trans. Assn. Ind. Med. Officers, 9: 51, July 1959 (Ind. Hyg. Dig. #999/59).
- 13. Hill, D.: Trans. Assn. Ind. Med. Officers, 9: 45, July 1959 (Ind. Hyg. Dig. #1000/59).
- 14. Gordon, E. E.: Ind. Med. & Surg. 28: 26, Jan. 1959.
  - 15. Personal correspondence.
  - 16. Personal correspondence.
  - 17. Personal correspondence.
  - 18. Personal correspondence.

## SOCIAL PSYCHIATRY

# F. C. REDLICH, M.D., AND MAX P. PEPPER, M.D.<sup>1</sup>

Thomas Rennie, the late pioneer in this field wrote a 13-page definition of social psychiatry (59) in the first issue of a journal which is devoted to this subject. Our own brief definition, influenced by Rennie, defines social psychiatry as the study of psychiatric disorders and psychiatric therapy, hopefully including prevention, within a social setting. This implies that social psychiatry is defined as an exploration of social systems and culture and their impact on psychiatric phenomena, rather than as a type of psychiatric practice. Obviously, all

<sup>1</sup> From the Department of Psychiatry, Yale University School of Medicine, New Haven 11, Conn.

psychiatry in relation to institutions—the courts and legal, military, governmental, educational, religious, industrial, ecomunity, and psychiatric institutions, per se, considered as social systems—would come under the purview of social psychiatry. As progress in these subfields is reviewed elsewhere, we shall attempt to focus on progress in the epidemiology of psychiatric disorders, on work in the areas of social system and culture studies, and on the general topic of personality and culture.

The history of social psychiatry has been reviewed recently by George Rosea (62). Of considerable interest also is a publication

by the World Health Organization on social psychiatry and community attitudes (65). Talcott Parsons discussed, in a very stimulating article, changes in American society and their bearing on medical education and practice, with special consideration of problems in psychiatry and psychotherapy (52). Of interest also for the student of social psychiatry is the recently published American Handbook of Psychiatry containing Edward Stainbrook's paper on community of the psychiatric patient (68) and the article by Paul B. Lemkau (35) on the organization of the community for mental health services. Also in the Handbook, Gardner Murphy makes a brief and clear statement about social psychology (47).

During the past year two edited volumes pertaining to the field have been published (46, 69). The source book by Jaco(29) contains very interesting articles by Parsons(57), Eaton(10), Harvey L. Smith (64), and others. The most important collection of papers in social psychiatry is Explorations in Social Psychiatry, edited by Leighton, Clausen, and Wilson (34). These papers were mostly the outcome of a conference on social psychiatry sponsored by the Social Science Research Council. Included are contributions by Gruenberg(25), Hinkle and Wolff(28), Kubie (33), Tyhurst (70), Volkart and Michael (71), and others. The international counterpart to the above mentioned volumes is Psychiatrie und Gesellschaft, edited by Ehrhardt(11). Another collection of interest is the publication of the proceedings of a symposium on social psychiatry by Pasamanick and Knapp (54).

A number of major epidemiological investigations are under way, but final publication of the major studies in Stirling County, Nova Scotia, and the MidTown Project in Manhattan have not yet appeared as of this writing. In any case, we seem to be much closer to reliable data on prevalence, although true incidence data are not yet available. In the meantime, Malzberg (41, 42) continues to publish on various aspects of mental hospital statistics. A very significant study on the hospitalized mentally ill in the United States was undertaken by Morton Kramer (32). Arentsen and Stromgren, Scandinavian pioneers in the

epidemiology of mental disorders, recently published data on hospitalized patients in Denmark(2). The relationship of bad housing conditions (measured by "lack of amenities") as bearing on the chances of admission to a mental hospital was examined by Lowe and Garrett(39). These . authors suggest that such conditions of bad housing may be more important in determining hospitalization rates than social isolation, per se (as measured by proportion of single-person households in an area). They differ in this respect with the classic studies of Faris and Dunham, and suggest that these authors overemphasized the factor of social isolation. The changing pattern of admission rates since the turn of the century in England with respect to distribution by sex is also documented by these authors. In most of these studies, the confusion in regard to diagnostic nomenclature is still a major handicap.

A number of papers were devoted to a description of psychiatric patients and to patterns of behavior and mental disorder in various cultures and groups (3, 6, 7, 12, 14, 21, 31, 56, 76). Some of these are thoughtful, like Carstairs', or indicate a thorough acquaintance with the culture, such as Hes' paper. Berne, who introduces the term "comparative psychiatry" as synonymous with social psychiatry, argues against what he sees as the current bias toward cultural etiology of mental disorder, but approaches the problem of morbidity measurements of mental disorder in the Fiji Islands by a statistical tour de force based on cultural determinants! Opler wrote a review of the role of anthropology in psychiatry (50), and another collection of papers on clinical studies of culture conflict was edited by Georgene Seward (63). Of more than historical interest to psychiatrists is Margaret Mead's account (45) of the work of Ruth Benedict (author of Patterns of Culture and other books) and her contribution to a new approach in anthropology.

The paper by Richard and Katherine Gordon(24) is a study of the impact of the community on the emotional health of children in a suburban town. Many publications have appeared which dealt with problems of prevention and therapy in the

community. In this brief summary, we only mention Margaret Gildea's exploration of a school-centered mental health education project(22) and the Cummings' exciting book(9) on the fate of a community-centered mental health educational project.

In the last few years, there has been a very active interest in the exploration of families of psychiatric patients. Spiegel and Bell wrote a review (67) with an excellent bibliography on the families of psychiatric patients. Nathan Ackerman's book(1) and a collection of papers edited by Jules Masserman(43) represent two recently published volumes on this important subject. The work of Lidz, Fleck, and co-workers has resulted in a number of very significant papers on the families of schizophrenics (15, 36, 37, 38). Wynne et al. (72) published an interesting paper, based on the study at the National Institute of Mental Health, of families of schizophrenics.

A very thorough study of social class differences and their impact on the dynamics of the patient and his family was reported by Myers and Roberts (48) in Social Class, Family Dynamics and Mental Illness, companion volume to Social Class and Mental Illness by Hollingshead and Redlich. Myers and Roberts explored specifically the role of the family and home and the impact of social mobility in the community on the course of disorders of 50 schizophrenic and neurotic patients belonging to social classes III and V. The effect of social class on tolerance of deviant behavior and evidence that the degree of such tolerance on the part of family members is a key factor affecting the course of the mental patient's post-hospital experience has been reported in a series of papers by Freeman and Simmons (16, 17, 18, 19). Performance levels in discharged mental patients are seen as related to class factors and intrafamilial relationships. Though careful not to draw conclusions as to etiology in these studies, the authors make an important contribution to the understanding of social variants in disordered behavior. Closely related to these studies are the reports emanating from the Social Psychiatry Research Unit at the Maudsley Hospital in London. Brown's followup study (4, 5) on a cohort of discharged schizophrenics from the hospital showed the successful outcome (as measured by patients remaining out of the hospital for at least a year after discharge and social adjustment scales) to be related to the type of living group to which the patients went: patients staying with siblings and in lodgings did better than those staying with parents, with wives, and in large hostels. Furthermore, the outcome bore little relationship to the patient': age, recorded diagnosis, or length of stay in the hospital. Careful followup studies such as those mentioned above certainly constitute an important advance in the field of the epidemiology of mental disorder. Another followup study was reported by Hastings on 1,638 patients consecutively admitted to the psychiatric section of a universit. hospital (26). A long-term followup study was reported by O'Neal and Robins (49).

A comprehensive and thorough epidemiologic study is that of Ginzberg, Ginzberg, and Herma of the Conservation of Fluman Resources Project at Columbia University on the ineffective soldier (23). In 3 volumes, the records of men who were rejected or prematurely separated from the service in World War II were analyzed, and emotional and social reasons for breakdown and inefficiency were elucidated. The importance of this study transcends military objectives. The strong interest of the military in social studies was also expressed in the proceedings of a symposium organized by David Rioch (6) under Army auspices.

The problem of normality has been a special concern of social psychiatry. It was reexamined in a monograph by Marie Jahoda (30) and also by Redlich (57), who examined the social need for treatment and the relationship of such a need to hypothetical normality.

A major contribution to an understanding of a hospital society is William Caudill's study of a psychiatric teaching hospital (8). Observing and testing staff and patients with great sensitivity, Caudill draws a fascinating picture of the psychiatric haspital. His analysis is concluded with concrete recommendations towards achieving the goal of a therapeutic community within the psychiatric hospital. Wilmer's study of a therapeutic community orientation on a

Naval hospital admission ward (75) is another contribution in this area.

Other papers dealing with social aspects of psychiatry include Pasamanick and Rettig's on the prestige status of psychiatrists (55). These authors found that psychiatrists have the lowest prestige of all physicians. Private practitioners have only a little more prestige than state hospital psychiatrists. Pasamanick and others (53) also found that diagnostic classification depended largely on the orientation of psychiatrists on hospital wards. The adverse impact of cultural attitudes on psychiatric clinical judgment was reported in a paper by Wainwright (73). A social and professional split in the ranks of the psychiatric profession into analytic-psychological and directive-organic practitioners was reported by MacIver and Redlich (40). Redlich also discussed the impact of American culture on analytic therapies (58). An enlightening paper dealing with the effect of cultural variables on the psychotherapeutic process was published by Spiegel (66). Wheelis in a brilliant book (74) described the impact of a culture on its members who have lost their sense of identity and have turned to psychoanalysis in a quest for identity; they become disappointed in their search because analysis cannot provide an ideology. Erich Fromm also dealt in a rather polemic fashion with the problem of values and psychoanalysis in his book Sigmund Freud and his Mission(20). Another viewpoint on the cultural implications of psychoanalysis is the scholarly book by Philip Rieff (60). Related to social analysis of psychiatric disorders and practice is the monograph by Fein(13) on the complex subject of cost of psychiatric illness and treatment(8). It is apparent from even such a brief summary of recent progress as this, that many disciplines (anthropology, economics, psychology, psychiatry, public health, sociology) are actively working on the total fabric which we now call social psychiatry.

# **BIBLIOGRAPHY**

- 1. Ackerman, Nathan W.: The Psychodynamics of Family Life. New York: Basic Books, 1959.
- 2. Arentsen, Kaj, and Stromgren, Erik: Patients in Danish Psychiatric Hospitals. Copenhagen: Acta Jutlandica, 1959.

- Berne, Eric : Am. J. Psychiat., 116: 104, 1959.
- 4. Brown, George W.: Milbank Memorial Fund Quart., 37: 105, Apr. 1959.
- 5. Brown, G. W., Carstairs, G. M., and Topping, G.: Lancet, 2: 685, Sept. 27, 1958.
- 6. Brown, Nora M.: Int. J. Soc. Psychiat., 4: 185, Winter 1959.
- 7. Carstairs, G. M.: Lancet, 1: 1217, June 7, 1958.
- 8. Caudill, William: The Psychiatric Hospital as a Small Society. Cambridge: Harvard University Press, 1958.
- 9. Cumming, Elaine, and Cumming, John: Closed Ranks: An Experiment for Mental Health Education. Cambridge: Harvard University Press, 1958.
- 10. Eaton, Joseph: Folk Obstetrics and Pediatrics Meet the M.D.: A Case Study of Social Anthropology and Medicine. *In*: Patients, Physicians and Illness. Ed. Jaco' (See 29).
- 11. Ehrhardt, H. (Ed.): Psychiatrie und Gesellschaft. Zurich: Hans Huber, 1958.
- 12. Fantl, Berta, and Schiro, Joseph: Int. J. Soc. Psychiat., 4: 245, Spring 1959.
- 13. Fein, Rashi: Economics of Mental Illness. New York: Basic Books, 1958.
- 14. Field, M. J.: J. Ment. Sc., 104: 1043, 1958.
- 15. Fleck, S., Lidz, T., Cornelison, A. R., Schafer, S., and Terry, D.: The Intrafamilial environment of the Schizophrenic Patient: Incestuous and Homosexual Problems. *In*: Individual and Family Dynamics. Ed. Masserman (See 43).
- 16. Freeman, Howard E., and Simmons, Ozzie G.: Am. Sociol. Rev., 23: 147, April 1958.
- 17. Freeman, Howard E., and Simmons, Ozzie G.: Social Forces, 37: 153, Dec. 1958.
- 18. Freeman, Howard E., and Simmons, Ozzie G.: Int. J. Soc. Psychiat., 4: 264, Spring 1959.
- 19. Freeman, Howard E., and Simmons, Ozzie G.: Am. Sociol. Rev., 24: 345, June 1959.
- 20. Fromm, Erich: Sigmund Freud and his Mission. New York: W. W. Norton, 1959.
- 21. Gaitonde, M. R.: Int. J. Soc. Psychiat., 4: 98, Autumn 1958.
- 22. Gildea, Margaret: Community Mental Health. Springfield, Ill.: Charles C Thomas, 1959.
- 23. Ginzberg, Eli, Ginsberg, Sol, and Herma, J.: The Ineffective Soldier: Lessons for Management and the Nation: Vol. I. The Lost Divisions. Vol. II. Breakdown and Recovery.

- Vol. III. Patterns of Performance. New York: Columbia University Press, 1958.
- 24. Gordon, Richard E., and Gordon, Katherine K.: Int. J. Soc. Psychiat., 4: 85, Autumn 1958.
- 25. Gruenberg, Ernest M.: Socially Shared Psychopathology. *In*: Explorations in Social Psychiatry. Ed. Leighton, *et al.* (See 34).
- 26. Hastings, Donald W.: Am. J. Psychiat., 114: 1057, 1958.
- 27. Hes, Jozef J.: Int. J. Soc. Psychiat., 4: 18, Summer 1959.
- 28. Hinkle, Lawrence E., Jr., and Wolff, Harold G.: Health and the Social Environment: Experimental Investigations. *In*: Explorations in Social Psychiatry. Ed. Leighton, *et al.* (See 34).
- 29. Jaco, E. Gartly (Ed.): Patients, Physicians and Illness. Glencoe, Ill.: Free Press, 1958.
- 30. Jahoda, Marie: Current Concepts of Positive Mental Health. New York: Basic Books, 1958.
- 31. Kelley, Sister M. William: Am. J. Psychiat., 115: 72, 1958.
- 32. Kramer, M., and Pollack, E. S.: Am. J. Public Health, 48: 1003, Aug. 1958.
- 33. Kubie, Lawrence S.: Social Forces and the Neurotic Process. *In*: Explorations in Social Psychiatry. Ed. Leighton, *et al.* (See 34).
- 34. Leighton, Alexander H., Clausen, John A., and Wilson, Robert N. (Eds.): Explorations in Social Psychiatry. New York: Basic Books, 1957.
- 35. Lemkau, Paul B.: Mental Health. In: American Handbook of Psychiatry. Ed. Arieti. New York: Basic Books, 1959.
- 36. Lidz, Theodore: Schizophrenia and the Family. Psychiatry, 21: 21, 1958.
- 37. Lidz, T. Cornelison, A., Terry, D., and Fleck, S.: A.M.A. Arch. Neurol. and Psychiat., 79: 305, 1958.
- 38. Lidz, T., Fleck, S., Cornelison, A. R., and Terry, D.: Am. J. Orthopsychiat., 28: 764, 1958.
- 39. Lowe, C. R., and Barratt, F. N.: Brit. J. Prev. and Soc. Med., 13: 88, April 1959.
- 40. MacIver, John, and Redlich, F. C.: Am. J. Psychiat., 115: 692, 1959.
- 41. Malzberg, B.: Ment. Hyg., 43: 115, 1959.
- 42. Malzberg, B.: Ment. Hyg., 43: 422, 1959.
- 43. Masserman, Jules H. (Ed.): Individual and Family Dynamics. New York: Grune & Stratton, 1959.
  - 44. McClelland, David C., Sturr, J. F.,

- Knapp, R. H., and Wendt, H. W.: J. Abborm. and Soc. Psychol., **56**: 245, 1958.
- 45. Mead, Margaret: An Anthropologist at Work: Writings of Ruth Benedict. Boston: Houghton-Mifflin, 1959.
- 46. Merton, Robert K., Broom, Lechard, and Cottrell, Leonard S., Jr.: Sociology Today, New York: Basic Books, 1959.
- 47. Murphy, Gardner: Social Psychology. In: American Handbook of Psychiatry. Ed. Arieti. New York: Basic Books, 1959.
- 48. Myers, Jerome K., and Roberts, Bertram H.: Social Class, Family Dynamics, and Mental Illness. New York: John Wiley & Sons, 1959.
- 49. O'Neal, Patricia, and Robins, Lee N.: Am. J. Psychiat., 114: 961, 1958.
- 50. Opler, Marvin K.: Anthropological Aspects of Psychiatry. In: Progress in Psychotherapy. Ed. Masserman. New York: Grune & Stratton, 1959.
- 51. Parsons, Talcott: Definitions of Health and Illness in the Light of American Values and Social Structure. In: Patients, Physicians, and Illness. Ed. Jaco (See 29).
- 52. Parsons, Talcott: J.A.M.A., 167: 31, 1958.
- 53. Pasamanick, Benjamin, et al.: Am. J. Psychiat., 116: 127, 1959.
- 54. Pasamanick, Benjamin, and Enapp, Peter H. (eds.): Social Aspects of Psychiatry. Am. Psychiat. Assn., Washington, D. C., 1958.
- 55. Pasamanick, Benjamin, and Rettig. Salomon: A.M.A. Arch. Neurol. and Psychiat., 81: 399, 1959.
- 56. Ratanakorn, Prasop: Studies of Mental Illness in Thailand. Thesis for Master of Science in Medicine, Graduate School of Medicine, University of Pennsylvania, 1957.
- 57. Redlich, F. C.: The Concept of Health in Psychiatry. In: Explorations in Social Psychiatry, Leighton, et al. (Eds.), (See 31).
- 58. Redlich, F. C.: Am. J. Psychiat. 114: 800, 1958.
- 59. Rennie, Thomas A. C.: Int. J. Soc. Psychiat., 1: 5, 1956.
- 60. Rieff, Philip: Freud: The Mind of the Moralist. New York: The Viking Press, 1959.
- 61. Rioch, David MacK. (organizer): Symposium on Preventive and Social Psychiatry, 15-17 April, 1957, Walter Reed Army Irstitute of Research, Walter Reed Army Medical Center. Govt. Printing Office, Washington, D. C., Jan. 1958.
- 62. Rosen, George: Milbank Memorial Fund, Quart., 37: 5, 1959.
  - 63. Seward, Georgene (ed.): Clinical

Studies in Culture Conflict. New York: Ronald Press, 1958.

64. Smith, Harvey L.: Two lines of Authority: The Hospital's Dilemma. *In*: Patients, Physicians, and Illness. Ed. Jaco (See 29).

65. Social Psychiatry and Community Attitudes. Seventh Report of the Expert Committee on Mental Health, Technical Report Series No. 177, World Health Organization, Geneva, 1959.

66. Spiegel, John P.: Some Cultural Aspects of Transference and Countertransference. *In*: Individual and Family Dynamics. Ed. Masserman (See 43).

67. Spiegel, John P., and Bell, Norman, W.: Family of the Psychiatric Patient. *In*: American Handbook of Psychiatry. Ed. Arieti. New York: Basic Books, 1959.

68. Stainbrook, Edward J.: Community of the Psychiatric Patient. *In*: American Handbook of Psychiatry. Ed. Arieti. New York: Basic Books, 1959.

69. Stein, Herman D., and Cloward, Richard A.: Social Perspectives and Behavior. Glencoe, Ill.: Free Press, 1958.

70. Tyhurst, James S.: Paranoid Patterns. In: Explorations in Social Psychiatry, Leighton, et al. (Eds.) (See 34).

71. Volkart, Edmund H., and Michael, Stanley T.: Bereavement and Mental Health. *In*: Explorations in Social Psychiatry, Leighton, *et al.* (Eds.) (See 34).

72. Wynne, L., et al.: Psychiatry, 21: 205, 1958.

73. Wainwright, W. H.: Int. J. Soc. Psychiat., 4: 105, Autumn 1958.

74. Wheelis, Allen: Quest for Identity. New York: W. W. Norton, 1958.

75. Wilmer, Harry A.: Social Psychiatry in Action: A Therapeutic Community. Springfield, Ill.: Charles C Thomas, 1958.

76. Yap, P. M.: Suicide in Hong Kong. Hong Kong University Press, 1958.

# CLINICAL NEUROLOGY

# WILLIAM H. TIMBERLAKE, M.D.1

#### CIRCULATION

Among the causes of cerebral arterial thrombosis, Elliott(30) lists hypertension, diabetes, polycythemia, thrombocythemia, hypercholesterolemia and, in young adults, porphyria. Strokes, like other illnesses which restrict carbohydrate intake, may cause a pseudodiabetic glucose tolerance curve. Thrombocythemia may cause cerebral thrombosis or hemorrhage without signs elsewhere. Before age 50, dissecting aneurysms of cerebral arteries mimic thrombosis (161).

Of 1,018 patients with cerebral thrombosis, 21% died in the initial attack (127). Half of the survivors were dead in 4 years, compared with 18% of a similar general population. Congestive failure, a severe initial attack or an early recurrence were ominous. Among 305 patients with infarcts, those of the brain stem had the best prognosis (95). Prospects for successful rehabilitation are less if the patient was physically inactive before the stroke, has a receptive aphasia, impaired intellect, severe or bi-

lateral signs or infection of skin or urinary bladder (10).

Among 50 patients with confirmed internal carotid artery occlusion, 10 had transient or permanent blindness; 9, hemianopsia; 4, pupillary abnormality; 4, extraocular palsies; and 2, bruits over the opposite eye (44). In a group of 124 patients, Hollenhorst (62) found lowered retinal pressure in 83 and approximately one-tenth each had homolaterally: retinopathy, less hypertensive arteriolar narrowing, or occlusion of the central retinal artery or a branch. He also describes two patients with cotton wool patches, probably due to ischemic infarcts. Pavlou and Wolff(120) found the homolateral conjunctival vessels dilated and the flow of blood through them so slowed that individual cells could be seen. In contrast to arteriovenous fistula, there was a paucity. of minute vessels.

Spalter (142) lists the contraindications to ophthalmodynamometry as retinal disease or high myopia which might cause retinal detachment, recent ocular surgery, central retinal artery or vein thrombosis and glaucoma. A fall in intraocular pressure

<sup>&</sup>lt;sup>1</sup> Harvard Medical School, Boston, Mass.

when the systolic pressure is being obtained may cause a return of pulsations and necessitates a ten minute wait between readings. Transient blindness may occur at systolic pressure (103). Readings should be checked 3 times for reproducibility and are more sensitive if they are measured with the patient supine and then erect (138). Measurements were inconclusive in a third of 16 patients with occlusion of the carotid in the neck because of bilateral, multiple or partial occlusions (49).

Arteriography visualizes only the larger vessels. McDowell et al. (97) believe it is not advisable or helpful in the usual patient with adequate history and clinical findings of cerebral thrombosis. They report 11 deaths in examining 13 patients who were in a stupor or coma or whose clinical state was worsening. Keirns and Whiteleather (72) who had only one death and 3 transient hemiplegias following 1,535 angiograms recommend percutaneous injection of only 5 to 7 cc. of hypaque sodium in 1.5 seconds, which is about the normal rate of blood flow. In 626 angiograms, which included the neck, they found the carotid stenosed in 108 and occluded in 21. They recommend endarterectomy for stenosis or thrombosis when the latter does not prevent filling of the siphon via the ophthalmic artery.

Hyperventilation, particularly by artificial respiration causes sufficient vasoconstriction to be clinically effective in lowering acute intracranial hypertension (89).

Anticoagulant therapy of infarcts produced by homologous emboli in dogs did not reduce intravascular thrombosis (122). The infarcts were more hemorrhagic and the mortality rate was higher than in controls. In 55 patients, the outcome was no better with anticoagulants, and one-third bled (4 in the brain) (149). Another 56 patients had no bleeding and were improved slightly (13). A 20% incidence of hemorrhagic complications cause Groch et al. (48) to emphasize the warning of a "bloody tap" or xanthochromic spinal fluid. In anticoagulant overdosage(114) one mg. of protamine intravenously counteracts one mg. of heparin. Twenty-five mg. of Phytonadione (vitamin K) intravenously counteracts coumarins in 6 hours, and 50 mg.

acts faster. In emergency, 1000 ml. of plasma (not necessarily fresh) given to a 70 kilogram man raises the prothrombin time from 5% to 30%.

Fibrinolysin (streptokinase), 200,000 units initially and then in divided daily doses is effective if given within 5 days of thrombosis (17, 34, 35). Later, it hay be ineffective or cause arterial emboism. It must be followed by anticoagulant therapy to prevent new clots on the damaged intima. Patients must be followed with prothrombin time, fibrinolytic level assays, and semiquantitative fibrinogen determinations. It may cause slight fever, nausea, and vomiting, and rarely, urticaria. Resultant hemorrhagic diatheses may be controlled with intravenous hydrocortisone.

Half of 350 normal brains had anomalies of the circle of Willis(3). At 2,796 routine autopsies, incidental berry ancurysms were found in 137(16). McKinsock et al.(99) retrospectively analyzed their results with 260 patients who had ancurysms and found no significant difference between operated and nonoperated patients. When multiple ancurysms are found, if operation is indicated both sides should be treated. Intracerebral hemorrhages should not be evacuated in older patients(81).

Fifty of 100 cases of cerebral angioma had focal seizures (130). Forty had recurrent headache, half with migraine-like visual phenomena. Calcified streaks were seen in 20, and enlarged vascular channels in 15. None had polycythemia. Pneumoencephalograms in 28 indicated an expanding lesion in half, localized atrophy in one-taird and generalized atrophy in two. Root pain was a prominent symptom in most of 19 patients with racemose angioma of the spinal cord (115). One-third had spastic paralysis without deep reflexes. Remissions occurred in 6. All spinal fluids had increased total protein, one was bloody and 5 had a block. A myelogram was diagnostic in 14 of 18.

Good circulation may persist in the legs with an occlusion of the abdominal aorta which causes an anterior spinal artery syndrome below  $T_7(20)$ .

Six patients with an air embolism at once became comatose and remained so for two or more days (112). Retinal artery occlusion blinded 3, and one had a myocardial in-

farct. Three developed epilepsy, and psychiatric symptoms persisted in all 6.

Sudden blindness in older patients with occlusion of the central retinal artery or its branches is usually due to arteritis and may antedate other symptoms by months. ACTH given on the day of blindness restored sight in every case (119).

#### INFECTION

A poliomyelitis microflocculation test has been developed (134, 139) which becomes positive in the first few days of infection, rises four-fold, and declines rapidly, so that it indicates current or very recent polio infection. Because of cross reactions between types, it cannot be used for typing. The effect of vaccination on it is not yet known.

Sabin Type II attenuated live policyruis vaccine was given to 198,965 children in Singapore (53) without untoward effects, and no Type II paralysis occurred. Six cases of Type I polio occurred in contrast to the 179 among 300,000 non-vaccinated children. In a Russian trial (141) there was a better antibody response than to Salk vaccine and no symptoms of lesions of nervous or other organs. Eight passages through susceptible children's intestines resulted in the periodic appearance of strains with slightly higher neutrotropic activity for monkeys, but in subsequent passages it returned to the previous level. Similar increases in virulence were observed in a Mexican trial(100) and some serologically susceptible children were resistant to vaccination apparently because current infection with non-polio virus. blocked implantation of vaccine virus.

Two patients with proved mumps virus were comatose for 36 and 72 hours, but recovered without sequelae (118).

Downie (26) reviews evidence that Herpes Zoster represents a second more localized tissue invasion by Varicella virus.

Hosty et al. (64) have developed a human antirabies gamma globulin which will avoid the risks of horse serum, yet provide immediate antibody to inactivate virus introduced by exposure and protect long enough for active immunization to result.

Amphotericin B, 1 mg. per kilogram in adults, is effective against Cryptococcus (96) and Coccidioidal diseases (159). Lumbar punctures should be used to detect

meningitis early. Intrathecal amphotericin, 0.7 mg. well diluted, may be necessary every 4 hours at first because of poor passage of amphotericin through the blood brain barrier. The prognosis may be good even though complement fixation titres remain high.

Adding streptomycin to massive penicillin therapy does not improve the outcome in pneumococcic meningitis (85). Early diagnosis is necessary for better treatment. Most deaths occurred when diagnosis was delayed 5 days.

Vomiting was a warning of otogenic meningitis in 38 children where other symptoms were masked by antibiotic treatment (56). Recovery was highest when treatment was given within 24 hours. Of 9 who convulsed, 8 died.

Intramuscular streptomycin and oral isoniazid, or PAS, was the best treatment of 207 patients with tuberculous meningitis (163) both as to survival and residual defects including ocular complications (105). Intrathecal streptomycin was not essential.

Leptospirosis is an increasingly recognized cause of aseptic meningitis (25, 29, 128, 131). Leptospira are numerous in the cerebro-spinal fluid during the prodromal period, but are absent 10 days later when the meningeal signs appear. Only agglutination tests will then establish the diagnosis. Icterus may not occur. Conjunctivitis is prominent and there may be a proximal neuropathy. Cells may not appear in the cerebro-spinal fluid for the first week, but then may persist for 5 months.

Prenatal serologic testing for syphilis continues to be necessary, for in the past decade a history of syphilis was obtained in one percent of mental defectives (9). The TPI and antilipoidal reactions in 386 spinal fluids confirm the specificity of the TPI test as an indication of central nervous system involvement by syphilis, but its significance regarding activity is unknown(5). In another 187 patients (77), positive complement fixation tests with Treponema Pallidum or Reiter's Protein indicated past or present central nervous system involvement, but not the activity of the process. It should be noted that storage in the deep freeze renders previously reactive fluids non-reactive.

A Lecithin-free cardiolipin antigen for complement fixation is less sensitive for syphilis, but more sensitive to biological false positive (BFP) reactors, e.g. sera from leprosy(131, 132). The BFP reaction is due to certain beta and gamma globulins(102).

Untoward penicillin reactions (50) have . increased only due to increased use of penicillin. They are so serious that unnecessary use of penicillin should be restricted. Local toxicity is largely overcome. Systemic toxicity may cause peripheral neuropathy and transient psychosis. Microbiogenically there has been no decrease in sensitivity of treponema pallidum, but there are dangers of superinfection with resistant staphylococcus and monilia. Other risks include release of noxious products due to lysis of treponemas, Vitamin B and K deficiencies, and increased susceptibility to polio because of the injection. Allergic reactions of exanthematous, angio-edemal and serum sickness type can be counteracted by penicillinase, 5000 units per 100,000 units of penicillin. Penicillin is undoubtedly the superior antibiotic, but when the above complications proscribe its Chlortetracycline, Chloramphenicol and Oxytetracycline may be given, 30 grams p.o. over an eight day period. Erythromycin and Carbomycin are effective in total dose of 20 grams over 8 days (104).

Hahn et al. (52A) report on the cooperative clinics study of penicillin treatment of general paresis. Six million units of penicillin is ample treatment. Retreatment is indicated only when the initial course was less than six million units, when temporary improvement is followed by clinical progression or when there are more than 5 cells in the spinal fluid a year after treatment. Spinal fluid pleocytosis at the time of treatment indicates an active process more susceptible to treatment. Improvement may be striking; however, residual deficits depend on permanent brain damage prior to treatment. Prognosis is worse when the psychosis or the neurologic deficit are severe or of long duration. Work status at the time of treatment and the length of time since the patient worked at his usual job are of great prognostic import.

Herxheimer reactions are not reduced by starting with small doses. They are more frequent with spinal fluid pleocytosis. Pretreatment with sedation and anticonvulsants is advisable.

Symptomatic management of late syphilis (52) includes bracing, not surgery, for Charcot joints, transurethral prostatectomy for bladder symptoms and Prednisone for nerve deafness of congenital syphilis.

#### NEOPLASM

Certain astrocytomas are sensitive to x-ray therapy (18). Cerebellopontine angle tumor can cause sudden deafness initially (54).

Multiple myeloma not only causes neutropenia, but also interferes with antibody formation predisposing the patient to pneumonia and meningitis (42).

Fatal intracranial hemorrhage in leukemia is not always due to thrombocytopenia (37). In leukemia (65) the "lymphocytes" in the cerebro-spinal fluid can be seen with supravital stains to be leukemic cells. Radiation therapy is more effective than chemotherapy for cerebral symptoms. An acute disseminated cerebral demyelination is sometimes associated with reticuloendothelial tumors (14, 88). Sarcoid must be added to the tumors causing myopathy (57). Neurological symptoms in systemic lupus erythematosis make the prognosis grave (129).

Instead of neuropathy, bronchial carcinoma may cause depression, intellect impairment and stupor (98).

Metastases to the spinal cord may be accurately located by the accompanying herpes zoster(7). Decompression of spinal metastases is not likely to help if flaccid paraplegia develops in 72 hours, or if sensory loss is complete.

Among 49 patients with hepatic coma, azotemia and oliguria occurred only in those who died. Those in stupor had respiratory alkalosis (148). In dogs, alteration of the pH gradient by respiratory alkatosis increased the ammonia concentration in the brain two or three times normal (143).

Low caeruloplasmin levels have been found only in hepatolenticular degeneration. To account for the wide scatter of caeruloplasmin levels in asymptomatic patients and siblings, Bearn(8) suggests that there are two genetically determined metabolic blocks, one lowering caeruloplasmin and a rarer one which doesn't. He suggests

the use of a tolerance test with oestrogens which markedly elevate caeruloplasmin levels in normals and Wilson's Disease. Curzon(24) relates the 4 tight copper bonds of caeruloplasmin to the location of histidine and cysteine in the molecule. Increased intestinal absorption of copper may result from lack of caeruloplasmin copper in the mucosal cells to block it. Aminoaciduria is probably due to increased copper in the kidney for it does not accompany low caeruloplasmin in all patients. Cummings (23) uses potassium sulfide, 20 mg., t.i.d., to hinder copper absorption from the intestine. BAL helps some patients. Penicillamine seems to remove copper better from liver than brain. Three cases of granulocytopenia have occurred during penicillamine treatment, perhaps due to pyridoxine antagonism(152).

### METABOLISM

In 196 sural nerve biopsies in diabetes mellitus, intraneural vascular lesions were greater with neuropathy. Neuropathy increased with duration of diabetes, advancing age and vascular change in other organs (32). Optic neuritis developed gradually in 14 uncontrolled diabetics, and control of the diabetes arrested the visual loss in 11 (137). The pupil is usually spared with paralysis of extraocular movements in diabetes. Ocular pain is common (74). Peripheral neuropathy in Cushing syndrome may be related to the diabetes (66).

Paraesthesias, burning pains, sometimes radicular, occur in half the patients with idiopathic and radio-iodine induced Myxedema(22). Symptoms are disproportionate to findings. Response to treatment is complete. In 20 cases of thyrotoxic myopathy (59) weakness was proximal in 19. Those without eye signs had a longer course.

In pernicious anemia, visual impairment due to retrobulbar neuropathy may precede other neurologic signs and even anemia, so a Shilling Test is helpful(55). Mental changes due to lesions of the cerebral white matter never preceded cord involvement, but like them did not parallel the anemia (156). Prognosis depends on the duration of symptoms, and there may be relapses with infections. By radioactive tracer methods Grösbeck(45) has calculated the B12

turnover in man as 300 micrograms per day.

Patients with Korsakoff psychosis have impaired ability to think coherently and reason with data immediately before them (150). Confabulation is not a primary symptom, but results from their forgetting more and at a steeper rate than controls(144). A single, symmetrical sharply outlined focus of myelin destruction was found in the rostral pons of four alcoholic patients. In two of them it had caused rapid, flaccid tetraplegia(2).

Desoxycorticosterone was the only steroid that did not aggravate seizures (60). Acute increases of intracranial pressure cause eosinopenia, sodium retention and increased steroid excretion (12).

Hypercalcemic states may increase cerebro-spinal fluid total protein up to 170 mg. percent(27).

Renal tubular malabsorption may cause proximal limb pain and weakness which responds to vitamin D and potassium (162).

Magnesium depletion is an important cause of twitching, tremor and fasciculation in malnourished patients (126). Clinical symptoms correlate better with intracellular (RBC) than extracellular (serum) levels of magnesium. The better treatment is magnesium chloride which ionizes more readily than magnesium sulfate (140).

Serum sodium should be checked daily in unconscious patients, particularly children, because high sodium induces subdural, subarachnoid and intracerebral hemorrhages (90).

The light skin pigmentation in phenyl-ketonuria is of systemic, not peripheral origin (58). The phenylketonuria paper test (Phenistix) with ferric chloride, magnesium and buffer, is effective and simpler than the ferric chloride test (41). Using it, Goldberg (53) found that half the carriers of the gene do not excrete porphobilinogen and during remissions patients may not. Attacks increase in the first trimester of pregnancy and just before delivery, during infections and after barbiturates, particularly those with an allyl group. Tachycardia is a good index of the activity of the disease.

### MOVEMENT DISORDERS

Twitchell(146) ascribes athetosis to a cerebral immaturity with inability to sup-

press antagonistic movements resulting from concurrent grasping and avoiding responses, mass movements of neck and labyrinthine origin, and there is a lack of eye-hand coordination.

Proclorperazine is added to the drugs which cause extrapyramidal reactions (117). The differing cortical and subcortical electrical effects of chlorpromazine, reserpine tremorine and pentobarbital are reported by Kaelber and Correl (71).

Careful initial and followup history regarding ocular pain, halos around lights, constricting fields and dimming vision will keep the risk of glaucoma small in antiparkinson drug therapy(27). The newer synthetic acetylcholine inhibitors have less peripheral but more cortical effect causing hallucinations(123).

Kuru, which principally attacks adult Indonesian women, causing ataxia, tremor and death within a year, is probably due to a genetic factor (38). Pathologically there is widespread neuronal degeneration, myelin loss predominantly in spino-cerebellar and corticospinal tracts, an intense astroand micro-glial proliferation, scattered perivascular cuffing and in half the cases anisotropic placques (75).

Acute cerebellar ataxia of children, if severe at onset, may last for years (155).

Rythmical myoclonus can originate from the brain stem or the spinal cord(91). The many sites of tonic and clonic head movements are reviewed by Mettler(101).

### OTHER CENTRAL NERVOUS SYSTEM CONDITIONS

Additional acrocentric chromosomes in the smallest size range in Mongoloid children suggests that the primary disorder is one of oogenesis (83, 36, 69).

A special number of the Acta Neurologica et Psychiatrica, Belgica, has been devoted to multiple sclerosis(1). Plum and Fog (124) in a detailed chemical comparison of 78 patients and 49 controls found in the cerebral spinal fluids an increase of total protein in 50%, and of gamma globulin in 65%. Cholesterol also was increased. Green et al.(46) found the latter in a number of other conditions, but only in multiple sclerosis was the ester over 60% of the total cholesterol. On electrophoresis of serum of multiple sclerosis patients, total protein was

lowered in the majority, albumin was lowered in all, and there was a relative increase in gamma and alpha-two globulins proportional to the duration and state ofthe disease(33). A 1.5 degree gradual increase of body temperature caused 13 of 14 multiple sclerosis patients to develop symptoms(111). Watson(153) reports a temporary, partial remission of symptoms while the body temperature was lowered one degree.

Quantitative assay of compounds in isolated fresh nerve cells and glial cells from control and stimulated animals suggests that glial cells donate energy or food to the nerve cells they serve (67).

Hemispherectomy (154) including corpus striatum, thalamus and hypothalamus in monkeys caused loss of fine movements but not of standing, walking and climbing. It also caused contralateral anaesthesia, except for pain which could still be accurately localized on the face. The degree of impairment of the "highest integrative activities" of man is a function of the total number of cortical neurons damaged, not their site or degree of dispersal (15).

Auditory illusions are usually caused by bilateral temporal lesions; visual illusions by nondominant temporal lesions (108).

Changing direction of joint movement causes a reciprocal shift of activity of adjacent post central gyrus neurons (106). There are cortical and subcortical inhibitory mechanisms improving touch discrimination (107). The superficial abdominal reflexes are polysynaptic spinal reflexes influenced by cerebral and spinal effects on the internuncial neurons (79, 51).

The spinal cord should be explored and electrically stimulated in traumatic paraplegia (109). When transection is partial, procaine injection of peripheral nerves, under direct vision, may relieve mass reflex spasm (110). Spinal alcohol injection is condemned.

### CRANIAL AND PERIPHERAL NERVES

An attack of trigeminal neuralgia is precipitated by a summation of touch stimuli and is followed by a relatively refractory period which can be increased by hydantoin(79). Except in the rare instances when it is due to multiple sclerosis or tumor of the middle or posterior fossa, it may be relieved in 73% of patients by "decompression" of the root as it crosses the apex of the petrous temporal bone (40). Costen has reviewed the causes and treatment of his mandibular joint syndrome (21).

All but 2% of patients with Bell's palsy recover well; operative risks of decompression are greater than this. Exercise should be prohibited until voluntary movement begins. Decompression should be reserved for those who fail to show any recovery after two months (157) even when the paralysis is secondary to basal skull fracture (86). Treatment with split hypoglossal grafts was successful and free of complications in 11 of 14 patients (73).

Microelectrode study indicates that sounds are localized by special units of the accessory superior olivary nuclei (39).

Ultrasonic treatment can destroy the whole labyrinth relieving Meniere's attacks without deafness(4).

Peripheral entrapment syndromes of the upper extremity have been reviewed by Thompson and Kopell (145).

### MUSCLE

Myasthenia gravis in 4 boys whose parents and sisters were normal suggests that the genetic factor is a sex linked recessive (151). Impaired progesterone metabolism to pregnandiol in myasthenia is restored by thymectomy, indicating an effect on the liver (135). At death, 5 myasthenic patients histochemically had almost no acetylcholinesterase inhibition, despite large antemortem doses of neostigmine, indicating an additional action of neostigmine (19). That this action is one on membrane function is suggested by the potentiating effect of veratrine which causes a slight net loss of potassium from the muscle (61).

In the treatment of myotonia, quinine was least effective, prednisone more effective, and procaine amide most effective (but the latter may cause agranulocytosis) (87). Potassium binding exchange resins have lessened myotonia in 6 cases (68, 146).

A reversible proximal myopathy due to steroids (158) is not due to potassium loss (121).

Use of short acting muscle relaxants (suxamethonium compounds) is followed

in a third of the patients by transient muscle pain and stiffness so severe that poliomyelitis or meningitis may be considered (82).

### PROCEDURES

Because sudden death immediately after tracheotomy is due to rapid reversal of the pre-existing respiratory acidosis, giving oxygen alone is dangerous, and vasopressors should be at hand(47). Chest x-ray before tracheotomy in infants is more reliable than recourse to an age table of crico-carinate distance, and prevents the pulmonary complications of a long cannula(160).

Cineradiography helps to clarify the reason some patients have difficulty with glossopharyngeal breathing and correct it (92). Radiologic and neurologic manifestations of spondylosis are reviewed by Epstein and Epstein (31) and the x-ray changes of carniopharyngiomas by Barnett (6).

Complications, other than headache, of lumbar puncture when cerebro-spinal fluid pressure is increased, are below 1.2% and actually are much more frequent when there is no papilloedema(78).

Discography is not superior to myelography, but may be a useful supplement (116). Repeat myelograms were done in 38 patients because of postoperative recurrence of symptoms (136). Operation confirmed a new disc at a new level in 5, and a recurrent herniation at the old level in 11 of the 16 who had defects. Nineteen of the 22 whose myelograms were normal gradually recovered without operation.

Air embolism complicating pneumoencephalography need not be fatal (70). A short bevel needle lessens the chance of the opening being half in a vessel. A stethoscope over the heart during the injection of the first milliliters of air permits one to hear the "mill wheel" murmur of air in the ventricle before a fatal quantity of air has been injected. Injection is stopped and the patient is turned onto his left side in steep Trendelenberg so that the bubbles are trapped in the apex and circulation is maintained. The air and frothy blood can then be aspirated by a needle inserted in the right ventricle.

Dog experiments demonstrate an almost all-or-none effect of exposure of the vascular bed to toxic concentrations of contrast

media (93). Even maintaining adequate intervals between injections of small volumes of dye, Brendler and Hayes (11) limit angiography in patients likely to have athersclerosis or over 50 years old. Although angiography is relatively quick and safe, 75% accurate in localization and by vascularity gives some evidence of tumor type, it may not indicate the full extent of a tumor and may fail to demonstrate an occipital, parietal, deep central or small tumor (113). In agenesis of the corpus callosum, the anterior cerebral artery shadow is more vertical and turns backward sooner (63).

A new technique of echoencephalography permits identification and demonstration of displacement of the pineal, whether or not it is calcified in adults or children (84).

Failure of the foetal innervation of muscles results in a distinctive electromyogram with small fibrillations and a hyperirritability to mechanical stimulation causing positive sharp waves (94). Two days are needed for electromyographic changes to appear after a ruptured disc (76).

# **BIBLIOGRAPHY**

- 1. Acta Neurol. Psych. Belg., **59**: 691, June 1959.
- 2. Adams, R. D., Victor, M., and Mancall, E. L.: A.M.A. Arch. Neur. Psych., 81: 154, Feb. 1959.
- 3. Alpers, B. J., Berry, R. G., and Paddison, R. M.: A.M.A. Arch. Neur. Psych., 81: 409, Apr. 1959.
- 4. Altmann, F., and Waltner, J. G.: A.M.A. Arch. Otolaryng., 69: 7, Jan. 1959.
- 5. Anderson, R. I., and Kent, J. F.: A. J. Clin. Path., 32: 233, 1959.
  - 6. Barnett, D. J.: Radiol., 72: 14, 1959.
- 7. Barron, K. D., et al.: Neurol., 9: 91, Feb. 1959.
- 8. Bearn, A. G.: Proc. Roy. Soc. Med., **52**: 61, 1959.
- 9. Berg, J. M., and Kirman, B. H.: Brit. J. Med., 2: 400, Sept. 1959.
- 10. Bonner, C. D.: Geriatrics, 14: 424, July 1959.
- 11. Brendler, S. J., and Hayes, G. J.: J. Neuro-Surg., 16: 454, July 1959.
- 12. Brilmayer, H.: Acta Endocrin., 31: 130, 1959.
- 13. Carter, A. B.: Quart. J. Med., 28: 125, 1959.

- 14. Cavanagh, J. B., et al.: Lancet, 2: 524, Oct. 1959.
- 15. Chapman, L. F., and Wolff, H. G.: A.M.A. Arch. Neur., 1: 357, Oct. 1959:
- 16. Chason, J. L., and Hindman, W. M.: Neurol., 8: 41, 1958.
- 17. Chopple, R. V., and Singher, H. O.: Canad. Med. Assoc. J., 81: 231, 1959.
- 18. Cocohi, V.: Dtsch. Med. Wschr., 84: 1333, July 1959.
- 19. Cohen, R. B., and Zacks, S. I. Am. J. Path., 35: 399, 1959.
- 20. Cook, A. W.: Bull. N. Y. Acad. Med., 35: 479, 1959.
- 21. Costen, J. B.: Laryngoscope, 69: 408, 1959.
- 22. Cravasse, L. E., and Logue, R. B.: Ann. Int. Med., 50: 1433, June 1959.
- 23. Cummings, J. N.: Proc. Roy. Soc. Med., **52**: 62, 1959.
- 24. Curzon, G.: Proc. Roy. Soc. Med., 52: 64, 1959.
- 25. Diaz-Rivera, R. S., et al.: A.M.A. Arch. Int. Med., 103: 886, June 1959.
- 26. Downie, A. W.: Brit. Med. Bull., 15: 197, Sept. 1959.
- 27. Édwards, G. A.: Am. J. Med., 27: 4, 1959.
- 28. Edwards, G. A., and Daum, S. M.; A.M.A. Arch. Int. Med., 104: 29, July 1959.
- 29. Edwards, C. E., and O'Doherty, D. S.: Bull. Georgetown Univ. Med. Cent., 12: 15, Sept. 1958.
- 30. Elliott, F. A.: Proc. Roy. Soc. Med., **52**: 544, July 1959.
- 31. Epstein, J. A., and Epstein, B. S.: Bull. N. Y. Acad. Med., 35: 370, 1959.
- 32. Fagerberg, S.: Acta. Med. Scand. Supp., 345, 1959.
- 33. Faizullaev, A. K.: Zdravookhr Todz,3: 21 (Abstr. Sov. Med. 1958), 1957.
- 34. Fletcher, A. P., Alkjaersig, N., and Sherry, S.: J. Clin. Invest., 38: 1096, July 1959.
- 35. Fletcher, A. P., Sherry, S., and Alkjaersig, N.: ibid. 1111.
- 36. Ford, C. E., et al.: Lancet, 1: 709, Apr. 1959.
- <sup>1</sup>37. Fritz, R. D., et al.: N. E. J. Med., **261**: 59, 1959.
- 38. Gajdusek, D. C., and Zigas, V. Am. J. Med., 26: 442, Mar. 1959.
- 39. Galambos, R., Schwartzkopff, J., and Rupert, A.: Am. J. Physiol., 197: 527, 1959.
- 40. Gardner, W. J., and Miklos, M. V.; J. Am. Med. Assoc., 170: 1773, 1959.
- 41. Cibbs, N. K., and Woolf, L. I.: Brit. Med. J., 2: 532, Sept. 1959.

- 42. Glenchur, H., Zinneman, H. H., and Hall, W. H.: A.M.A. Arch. Int. Med., 103: 173, Feb. 1959.
- 43. Goldberg, A.: Quart. J. Med., 28: 183, 1959.
- 44. Gordon, N. : Brit. J. Ophthal., 43 : 257, 1959.
- 45. Gräsbeck, R.: Scand. J. Clin. Lab. Invest., 11: 250, 1959.
- 46. Green, J. B., et al.: J. Neur. Neurosurg. Psychiat., 22: 117, 1959.
- 47. Greene, N. M.; N. E. J. Med., 261: 846, 1959.
- 48. Groch, S. N., et al.: Neurol., 9: 786, Nov. 1959.
- 49. Gurdjian, E. S., et al.: J. Nerv. Ment. Dis., 129: 273, 1959.
- 50. Guthe, T., Idsoe, O., and Willcox, R. R.: Bull. Wld. Hlth. Org., 19: 427, 1959.
- 51. Hagbarth, K. E., and Kugelberg, E.: Brain, 81: 305, 1959.
- 52. Hahn, R. D.: J. Chron. Dis., 10: 67, 1959.
- 52A. Hahn, R. D., et al.: A.M.A. Arch. Neur. Psychiat., 81: 557, May 1959.
- 53. Hale, J. H., et al.: Brit. J. Med., 1: 1541, June 1959.
- 54. Hallberg, O. E., et al.: A.M.A. Arch. Otolaryngol., 69: 160, Feb. 1959.
- 55. Hamilton, H. E., Ellis, P. E., and Sheets, R. F.: Blood, 14: 378, Apr. 1959.
- Hara, H. J.: A.M.A. Arch. Otolaryngol.,
   315, Sept. 1959.
- 57. Harvey, J. C.: Am. J. Med., 26: 356, Mar. 1959.
- 58. Hassel, C. W., and Brunstring, L. A.: A.M.A. Arch. Dermat., 79: 458, Apr. 1959.
- 59. Hed, R., Kirstein, L., and Lundmark, C.: J. Neur., Neurosurg., Psychiat., 21: 270, Nov. 1958.
- 60. Hoagland: Consciousness and Chemical Environment of the Brain. Ross Pediat. Research Conf., 1958.
- 61. Hoffman, W. W.: Neurol., 8: 917, Dec. 1958.
- 62. Hollenhorst, R. W.: Am. J. Ophthal., 47: 753, June 1959.
- 63. Holman, C. B., and MacCarty, C. S.: Radiol., 72: 317, 1959.
- 64. Hosty, T. S., et al.: Bull. Wld. Hlth. Org., 20: 1111, 1959.
- 65. Hunt, W. E., Bournoncle, B. A., and Meagher, J. N.: J. Neurosurg., 16: 135, Mar. 1959.
- 66. Hurxthal, L. M., and O'Sullivan, J. B.: Ann. Int. Med., 51: 1, July 1959.
- 67. Hyden, H.: Nature, 184: 433, Aug. 1959.

- 68. Ilina, N. A.: Klin. Med. (Moskva), 9: 108 (Abstr. Sov. Med., 1958) 1957.
  - 69. Jacobs, P., et al.: Lancet, 1:710, 1959.
- 70. Jacoby, J., et al.: Anaesthsiol., 20: 336, June 1959.
- 71. Kaelber, W. W., and Correll, R. E.: A.M.A. Arch. Neur. Psychiat., 80: 544, Nov. 1958.
- 72. Keirns, M. M., and Whiteleather, J. E.: Am. J. Roentgen., 81: 929, June 1959.
- 73. Kessler, L. A., Moldaver, J., and Pool, J. L.: Neurol., 9: 118, Feb. 1959.
- 74. King, F. P.: A.M.A. Arch. Int. Med., 104: 318, Aug. 1959.
- 75. Klatzo, I., Gajdusek, D. C., and Zigas, V.: Lab. Invest., 8: 799, July 1959.
- 76. Knutsson, B.: Acta. Orthoped. Scand., 28: 290, 1959.
- 77. Kostant, G. H., Landy, S. E., Miler, J. N., and Kelcec, L. E.: A.M.A. Arch. Dermat., 80: 439, 1959.
- 78. Krein, J., Craviota, H., and Leicoch, M.: Neurol., 9: 290, Apr. 1959.
- 79. Kugelberg, E., and Hagbarth, K. E.: Brain, 81: 290, 1958.
- 80. Kugelberg, E., and Lindblom, U.: J. Neur., Neurosurg., Psychiat., 22: 36, 1959.
- 81. Lazorthes, G.: J. Neurosurg., 16: 355, July 1959.
- 82. Leatherdale, R. A. L., et al.: Brit. J. Med., 1: 904, Apr. 1959.
- 83. Lejeune, J., et al.: C. R. Acad. Sci. Paris, 248: 602, 1959.
- 84. Leksell, Lars : Acta. Chir. Scand., 115 : 255, 1958.
- 85. Lepper, M. H., and Spies, H. W.: A.M.A. Arch. Int. Med., 194: 253, Aug. 1959.
- 86. Lewis, M. L.: Laryngoscope, 69: 744, 1959.
- 87. Leyburn, P., and Walton, J. N.: Brain, 82: 81, 1959.
- 88. Lloyd, O. C., and Ulrich, H.: Lancet, 2: 529, Oct. 1959.
- 89. Lundberg, N., Kiollquist, A., and Bien, C.: Acta Psychiat. Neur. Scand. supp. 139, 1959.
- 90. Luttrell, C. N., Bang, F. B., and Luxenberg, K.: A.M.A. Arch. Neur. Psychiat., 81: 285, Mar. 1959.
- 91. Luttrell, C. N., and Finberg, L.: A.M.A. Arch. Neur. Psychiat., 81: 424, Apr. 1959.
- 92. Mardran, G., et al.: Brit. J. Radiol., 32: 322, May 1959.
- 93. Margolis, G., et al.: J. Neurosurg., 16: 390, July 1959.
- 94. Marinacci, A. A.: A.M.A. Arch. Neur., 1: 243, Sept. 1959.

95. Marshall, J., and Shaw, D. A.: Brit. J. Med., 1: 1614, June 1959.

96. Martin, W. J., et al.: A.M.A. Arch. Int. Med., 194: 4, 1959.

97. McDowell, F. H., et al.: A.M.A. Arch. Neur., 1: 435, Oct. 1959.

98. McGovern, G. P., Miller, D. H., and Robertson, E. E.: A.M.A. Arch. Neur. Psychiat., 81: 341, Mar. 1959.

99. McKissock, W., Paine, K., and Walsh, L.: J. Neur., Neurosurg., Psychiat., 21: 239, Nov. 1959.

100. Melnick, J. L., et al.: J. Am. Med. Assoc., 171: 1165, Oct. 1959.

101. Mettler, F.: A.M.A. Arch. Neur. Psychiat., 81: 442, Apr. 1959.

102. Miller, J. L., Brodey, M., and Hill, J. H.: A.M.A. Arch. Dermat., 79: 206, 1959. 103. Mones, R.: J. Mt. Sinai Hosp., 26: 71, 1959.

104. Montgomery, C. H., and Knox, J. N.: N. E. J. Med., 261: 277, 1959.

105. Mooney, A. J.: Am. J. Ophthal., 48: 297, Sept. 1959.

106. Mountcastle, V. B., and Powell, T. P.
S.: Bull. J. Hopkins Hosp., 105: 173, 1959.
107. *Ibid.*: 105: 201, 1959.

108. Mullan, S., and Penfield, W.: A.M.A. Arch. Neur. Psychiat., 81: 269, Mar. 1959.

109. Monroe, D.: N. E. J. Med., **261**: 833, Oct. 1959.

110. Munroe, D., and Spatz, E. L.: N. E. J. Med., 260: 1, Jan. 1959.

111. Nelson, D. A., and McDowell, F.: J. Neur., Neurosurg., Psychiat., 22: 113, 1959. 112. Neugebauer, W.: Dtsch. Med. Wschr.,

84: 1264, 1959.

113. New, P. F. J.: Radiol., 72: 35, 1959.
114. Current Concepts in Therapy: N. E. J. Med., 260: 545, Mar. 1959.

115. Newman, M. J. D.: Quart. J. Med., 28: 97, Jan. 1959.

116. Nordlander, S., Salen, E. F., and Unander-Schafin, L.: Acta Orthoped. Scand., 28: 90, 1959.

• 117. O'Hara, V. S.: N. E. J. Med., 259: 826, Oct. 1959.

118. Overman, J. R.: Am. J. Med., 26: 957, 1959.

119. Parsons-Smith, G.: Brit. J. Ophthal., 43: 204, 1959.

120. Pavlou, A. T., and Wolff, H. G.: Arch. Int. Med., 104: 53, July 1959.

121. Perkoff, G. T., et al.: Am. J. Med., 26: 891, 1959.

122. Peterman, A. F., et al.: J. Neuropath., 13: 263, 1959.

123. Pfeiffer, C. C., et al.: Neurol., 9: 249, Apr. 1959.

124. Plum, C. M., and Fog, T.: Acta Psychiat., Neur. Scand. Suppl., 128: 1, 1959.

125. Poppen, J. L., and Fager, C. A.: J. Neurosurg., 16: 581, Sept. 1959.

126. Randall, R. E., Rossmeisl, E. C., and Bleifer, K. H.: Ann. Int. Med., 50: 257, Feb. 1959.

127. Robinson, R. W., et al.: J. Am. Med. Assoc., 169: 1149, Mar. 1959.

128. Ross Russell, R. W.: J. Neur., Neurosurg., Psychiat., 22: 143, 1959.

129. Rupe, C. E., and Nickel, S. N : J. Am. Med. Assoc., 171 : 1055, Oct. 1959.

130. Sabra, F.: J. Am. Med. Assoc., 70: 1522, 1959.

131. Saslaw, S., and Swiss, E. D.: A.M.A. Arch. Int. Med., 103: 876, June 1959.

132. Schmidt, H.: Bull. Wld. Hl-h. Org., 20: 1175, 1959.

133. *Ibid.*: Brit. J. Venereal Dis., **35**: 47, 1959.

134. Schmidt, N. J., and Lennette, E. H.: Am. J. Hygiene, 70: 51, 1959.

135. Schrire, I.: Quart. J. Med., 28: 59, Jan. 1959.

136. Silver, M. L., et al.: Radiol., 72: 344, 1959.

137. Skillern, P. G., and Lockhart, G.: Ann. Int. Med., 51: 468, Sept. 1959.

138. Smith, J. L., Zieper, I. H., and Cogan,
D. C.: J. Am. Med. Assoc., 170: 1403, 1959.
139. Smith, W., et al.: Lancet, 2: 586, 1959.

140. Smith, W. O., and Hammarsten, J. F.: Am. J. Med. Sci., 237: 413, Apr. 1955.

141. Smorodintsev, A. A., et al.: Bull. Wld. Hlth. Org., 20: 1053, 1959.

142. Spalter, H. F.: Am. J. Oph-hal, 47: 453, Apr. 1959.

143. Stabenau, J. R., Warren, K. S, and Rall, D. P.: J. Clin. Invest., 38: 373 Feb. 1959.

144. Talland, G. A., and Ekdahl, M.: J. Nerv. Ment. Dis., 129: 341, Oct. 1959.

145. Thompson, W. A. L., and Kop∋ll, H. P.: N. E. J. Med., 260: 1261, 1959.

146. Tompkins, V., Lascelles, R. G., and McKinney, B.: J. Neur., Neurcsurg., Psychiat., 22: 50, 1959.

147. Twitchell, T. E.: N. Nerv. Ment. Dis., 129: 105, Aug. 1959.

148. Tyror, M. P., and Sieker, H. O.: Am. J. Med., 27: 50, 1959.

149. Vastola, E. F., and Frugh, A.: Neurol., 9: 143, Mar. 1959.

150. Victor, M., Talland, G. A., and Adams, R. D.: N. Nerv. Ment. Dis., 128: 528, June 1959.

Tan.

151. Walsh, F. B., and Hoyt, W. F.: Am. J. Ophthal., 47: 28, 1959.

152. Walshe, J. M.: A.M.A. Arch. Int. Med., 103: 155, Jan. 1959.

'153, Watson, C. W.: N. E. J. Med., 261: (in press), Dec. 1959.

154. White, R. J., et al.: Neurol., 91: 149, Mar. 1959.

155. Weiss, S., and Carter, S.: Neurol., 9: 711, Nov. 1959.

156. Wiener, J. S., and Hope, J. M.: J. Am. Med. Assoc., 170: 1038, 1959.

157. Williams, H. L.: A.M.A. Arch. Otolaryngol., 70: 436, Oct. 1959.

158. Williams, R. S.: Lancet, 1: 698, 1959. 159. Winn, W. A.: Am. J. Med., 27: 617, Oct. 1959.

160. Winter, A., and Gilmore, E.: N. E. J. Med., 261; 482, Sept. 1959.

161. Wolman, L.: Brain, 82: 276, 1959. 162. Worthington, J. W., and Mulder, D.

W.: Neurol., 9: 475, 1959. 163. Wright, N. L.: Quart. J. Med., 28: 449, July 1959.

## ALCOHOLISM

# KARL M. BOWMAN, M.D.<sup>1</sup>

An important re-evaluation of the Jellinek formula appeared in the June issue of the Quarterly Journal of Studies on Alcohol. John Seeley (1) states,

A logical demonstration, believed to be conclusive, is made that the present most commonly used method of estimating the prevalence of alcoholism is in error to so serious an extent that assertions as to "the magnitude of the problem" are misleading, and scientific studies based on these data, quite probably, invalid.

Jellinek(2) himself agrees with Brenner's (3) criticism of PD in the numerator of the "Jellinek formula" and concludes,

Generally, I would not be in favor of the continued use of my formula, nor of any modification of it, as there are too many fluctuating factors present. Much more to be desired is a new basis, and particularly actual field sur-

· A group(4) investigating the low level of serum magnesium in patients with delirium tremens and alcoholic hallucinosis reports that because sweat contains an extremely high concentration of magnesium, severe sweating in delirium tremens may be a significant factor affecting serum magnesium concentration. Upon cessation of symptoms serum magnesium levels rose in every case, regardless of initial levels. The authors speculate as to whether the deficit results from, or causes delirium, increased psychomotor agitation, disorientation, hyperhydrosis and hallucinosis.

Clark and Halpieu(5) found that in 56 dogs, 100-125 mg. of animal charcoal per kg. of weight produced sensitization to alcohol comparable to that produced by 0.5 to 1.0 mg. per kg. of calcium carbimide and 5.0 to 10.0 mg. per kg. of disulfiram. In another research experiment(6), 3 of 4 groups of rats on a nutritionally adequate but calorically deficient diet were given varying amounts of sucrose supplement and a fourth was given a 15% alcohol solution instead of drinking water. From a checkup of the rats' caloric intake and rate of weight gain, the authors conclude that all the energy present in alcohol appears to be available in the animal body for growth. In a study of water- and alcohol-drinking habits of rats, the same team (7) noted that only 5 of 25 rats made consistent choices when the drinking dish location was varied because the rats' drinking preferences were influenced by their being either right- or left-pawed. They concluded that "had we not become aware of the importance to some rats of the location of the fountains . . . we might have inadvertently attributed the differences in alcohol intake to some genetic factor." Moving the alcohol dispenser cured some rats' "alcoholism." In another study (8), alcohol ingestion in mice was found to increase following administration of sodium chloride, which may be related to a secondary response due to liver dysfunction. Ditman and Mooney(9), studying the effects of phenyltoloxamine

<sup>&</sup>lt;sup>1</sup> Professor of Psychiatry Emeritus, Univ. of California Medical Center, San Francisco 22, Calif.

(PRN) in 26 chronic alcoholics, found no better effects from PRN than from placebos.

Two studies, the one on the combined effects of alcohol and phenobarbitone (10), the other on alcohol and chlorpromazine (11), showed that in combination with alcohol, both drugs potentiated the effects of alcohol. The combined effects of half doses of alcohol and of either drug were greater than those following a single full dose of alcohol.

It seems important, considering the controversy about the value of insulin in the treatment of acute alcoholism, that alcohol metabolism was 21% higher in those subjects given insulin and 19% higher in those given insulin plus glucose, than in controls (12). Also of interest are Lundquist and Wolthers' conclusions (13) that the average rate of alcohol elimination in man is increased 6% after glucose administration and by 34% after fructose.

Partridge(14), in England, advocates chlorpromazine or promazine and so-called modified insulin treatment for controlling delirium tremens and suggests that modified insulin treatment is also valuable for detoxicating the alcoholic who remains short of delirium. He suggests vitamin dosage given intravenously, added to an intravenous infusion of 1,000 to 2,000 ml. of 10% dextrose in normal saline containing also 30 units of insulin. Allgen et al. (15), obtained excellent results in the treatment of 7 patients with severe delirium tremens with Viadril, whose only complication was thrombophlebitis in recipient veins. According to Kofman(16), the treatment of 114 alcoholics receiving perphenazine proved more satisfactory than that of 163 receiving reserpine because of the potent action and lack of side effects of intramuscular perphenazine in short-term therapy. Nocturia was found to be a distressing side effect of temposil in one report(17). In Glatt's(18) comparative study of disulfiram and temposil, on the whole the reactions to temposil were much less severe than to disulfiram, but the administration of temposil tests in an outpatient clinic seemed risky because of possible craving reactivation. Glatt suggests that choice of drugs may depend on the individual patient's personality; he recommends psychotherapy and AA affiliation in conjunction with physical therapy.

Copenhagen since 1953(19) has demonstrated a unified medical approach with a consistent treatment program for alcoholism: it includes an outpatient alcoholic clinic; a 37-bed sanatorium for males; and agreements with the psychiatric admission departments to accept acute cases and with the outpatient municipal hospital clinics and TB dispensaries to treat all somatic conditions. The sanatorium's figures for a 3-year period show that 38% of 1,312 patients were improved. Other large Canish towns have established treatment centers with uniform treatment practices.

Outpatient treatment in Poland (20), under difficult conditions and without the public health authorities' cooperation consists of educational psychotherapy supplemented by Antikol (disulfiram), sedatives, tranquilizers and large doses of vitamins B and C. Results of a 3- to 6-month followup study in 1955 showed one third of the outpatients were "socially useful."

According to an abstract (21) from the 1956 Russian medical encyclopedia, the total alcohol consumption in Russia per capita in 1948-50 was 38% less than in 1891 and much lower than in capitalist countries. The Moscow traffic regulations draision showed that 27% of accidents involving pedestrians in 1953-54 resulted from redestrian intoxication and 17% of traffic accidents resulted from driver intoxication. Drunkenness constitutes no mitigating circumstance for any crime and increases the responsibility in motor accidents. Hypnotherapy and conditioned-reflex therapy are emphasized. By official estimates, alcoholies, mostly chronic alcoholies without psychosis, occupied 2% of psychoneurologic institution beds in the 1950-55 period.

Because of the high incidence (25%) of ulcer histories in 600 male alcoholic patients, an Austrian investigator (22) considered the "most substantial link between alcohol and stomach ulcer . . . a common psychodynamic factor," and addiction following gastric surgery a displacement of symptoms.

In a re-evaluation of the familiar statistics about annual loss of time and high accident rates among problem drinkers, 2 investigators (23) compared 3 groups, 1 of 48 problem drinkers and 2 control groups, whose average tenure was about 28 years in a large U. S. company. Overall, the problem drinkers were absent 2.5 times as many days, cost 3 times as much in sickness payments and had 3.6 times as many accidents as did the matched controls.

The Uniform Vehicle Code, Model Chemistry Test Law defining drunkenness by weight of blood alcohol was used in 27 states as of July 1, 1957. The definition is: at or below 0.05%, the defendant is not considered drunk; at over 0.05 but under 0.15%, he is not presumed to be drunk but the findings may be considered in determining his guilt; and at 0.15% or above, he is considered drunk. In a study (24) of all single vehicle fatal accidents in Westchester County for a year's period, 49% of the fatalities had 0.15% blood alcohol levels at death; 20% had 0.05 to 0.15%; and 27% had no blood alcohol. The authors conclude that alcohol usage was probably a causal factor in the deaths of one half or more of the drivers killed in single vehicle accidents in that county over an 8-year period. From these data and a similar Delaware police study, in which 10 of 15 fatally injured drivers had 0.15% or higher blood alcohol levels, they suggest that the high alcohol levels observed in this type of accident may exist in other U. S. sections.

The San Francisco Community Health Services Committee (25) urged that coverage of hospital and follow-up outpatient treatment for alcoholics be studied by companies offering group health insurance. One Blue Cross contract, covering the C&H Sugar Refining Corporation and the Refinery Workers union, already includes alcoholic care if provided in a general hospital.

The September issue of the Quarterly Journal of Studies on Alcohol presents substantially the same papers that were read at the October 1958 Research Conference on Problems of Alcohol and Alcoholism.

The Alcoholism Research Foundation of Ontario (26) recently published its first extensive statistical report of alcohol use and alcoholism in Canada from 1871 to 1956. Although the prevalence figures are based on the Jellinek formula, other figures regarding alcohol consumption, the size and

characteristics of the drinking population and convictions for offenses involving alcohol are not affected.

### BIBLIOGRAPHY

- Seeley, J. R.: Quart. J. Stud. Alcohol, 20: 245, 1959.
- Jellinek, E. M.: Quart. J. Stud. Alcohol,
   20: 261, 1959.
- 3. Brenner, B.: Quart. J. Stud. Alcohol, 20: 255, 1959.
- 4. Mendelson, J., et al.: J. Nerv. & Ment. Dis., 128: 352, 1959.
- 5. Clark, W. C., and Hulpieu, H. R.: J. Pharmacol. & Exper. Therap., 123: 74, 1958.
- 6. Gillespie, R. J. G., and Lucas, C. C.: Canad. J. Biochem. & Physiol., 36: 307, 1958.
- 7. Gillespie, R. J. G., and Lucas, C. C.: Canad. J. Biochem. & Physiol., 36: 37, 1958.
  - anad. J. Biochem. & Physiol., 36: 37, 1958. 8. Iida, S.: Jap. J. Pharmacol., 6: 87, 1957.
- 9. Ditman, K. S., and Mooney, H. B.: Quart. J. Stud. Alcohol, 20: 276, 1959.
- 10. Joyce, C. R. B., et al.: J. Ment. Sc., 105: 51, 1959.
- 11. Zirkle, G. A., McAtee, O. B., and King, P. D.: Read at the Am. Psychiat. Assoc. meeting, April 1959.
- 12. Newman, H. W., Smith, M. E., and Newman, E. J.: Quart. J. Stud. Alcohol, 20: 213, 1959.
- 13. Lundquist, F., and Wolthers, H.: Acta Pharmacol. et Toxicol., 14: 290, 1958.
- 14. Partridge, M.: Brit. M. J., No. 5126: 915, 1959.
- 15. Allgen, L. G., et al.: Svens. Läkartid., 55: 2665, 1958.
- 16. Kofman, O.: Canad. M. A. J., 79: 988, 1958.
- 17. Turk, R. E.: Personal communication, 1959.
- 18. Glatt, M. M.: J. Ment. Sc., 105: 476, 1959.
- 19. Yde, A., and Venge, I.: Danish M. Bull., 5: 210, 1958.
- 20. Kulisiewicz, T.: Polsk. Tyd. lek., 13: 141, 1958.
- 21. Efron, V.: Quart. J. Stud. Alcohol, 19: 668, 1958.
- 22. Navratil, L.: Quart. J. Stud. Alcohol, 20: 236, 1959.
- 23. Observer and Maxwell, M. A.: Quart. J. Stud. Alcohol, **20**: 302, 1959.
- 24. Haddon, W., and Bradess, V. A.: J.A.M.A., 169: 1587, 1959.
  - 25. San Francisco Chronicle, May 14, 1959.
- 26. Popham, R. E., and Schmidt, W.: Statistics of Alcohol Use and Alcoholism in Canada 1871-1956. Canada: Univ. Toronto Press, 1958.

## **GERIATRICS**

# KARL M. BOWMAN, M.D., AND BERNICE ENGLE, M.A.1

The WHO advisory group on public health aspects of the old, recently recommended various provisions for the tremendous increases, proportional and absolute, in aging populations. Japan has had the largest proportional increase. In Russia the average life span has more than doubled since 1917; Khrushchev's average contemporary will die at age 67. The U. S. Social Security Administration began late in 1959 a semiannual count of centenarians on the old-age and survivors' insurance rolls; the last count, in 1950, showed 4,474 centenarians.

Various ataractic drugs reported on favorably in the treatment of fairly large series of elderly psychiatric patients under controlled conditions, and without undesirable side effects, include hydroxyzine, buclizine, and methylphenidate hydrochloride. Tranquilizers were successfully combined with a vitamin-hormone stimulant (Ritonic) and with a nutritional-hormone supplement (Neobon).

Poor results were also reported. A variant of diphenhydramine hydrochloride (Covatin) was ineffective in 14 elderly female patients treated for 8 weeks, as was oral pentamethylenetetrazol in 44 senile patients treated under control conditions. Procaine hydrochloride, praised as a Roumanian wonder drug, was found to be no panacea, but merely a mild activator of the pituitaryadrenal system. The use of Tofranil (250 mg. daily) in 6 elderly psychiatric patients was followed by a sudden reaction, with coarse tremor in all limbs, present even at rest. The tremor cleared quickly upon withdrawal of the drug, which was resumed in lower dosage.

Reports by Chow(1) and by Droller and Dossett(2) indicate that vitamin B<sub>12</sub> deficiency may be a cause of senile dementia and confusional states. Settel(3) found a mild to moderate protein depletion and negative nitrogen balance in 32 geriatric patients (aged 62-89) studied for 8 to 10 months.

Birren(4) reported among the results of an intensive study of 59 men aged 55-65, living in the community, that age was not necessarily accompanied by a change in the cerebral blood flow and cerebral metabolism; and that the demonstrable changes in mental abilities were much smaller than those previously reported. According to an extensive review(5) of current trends in problems of the aged, in general, the majority of the biologic, genetic, cultural and psychologic factors favor females over males in health and longevity.

According to a study(6) of 3 groups of men divided into age levels from 30 to 60, the serum cholesterol level, the frequency of arcus senilis and the incidence of coronary artery disease were much nigher in the group who had an intense drive for achievement and were continually involved in competitive efforts, than in those characterized essentially by the converse pattern.

An extensive review (7) showed increased use of psychotherapy with geriatric patients; supportive approaches and active therapy predominated over insight therapy. In the few reports dealing with group psychotherapy, results were more systematically evaluated than in individual therapy, perhaps because of rather large samples of institutionalized patients and controls. Rosenthal(8) reported successful psychotherapy of about 30 elderly patients, most of whom were treated just like younger patients. Both writers advise extensive research into the idea that persons beyond a certain age (say, 40) are not amenable to psychotherapy.

The standard for performance by older people on the Wechsler Adult Intelligence Scale (WAIS) was established on 352 subjects in metropolitan Kansas City. This standard, tentatively accepted by Wechsler as a national norm, was tested by Eisdorfer et al. (9) on 130 normal subjects, aged 60-75, and on 32 mental hospital patients in North Carolina. Since the results—a higher Verbal than Performance IQ score in 82%, except for the hospitalized group aged 70-74—

<sup>&</sup>lt;sup>1</sup> University of California Medical Center, San Francisco 22, Calif.

contradict the Kansas City norms, the authors question the generality of this sample as the basis for national norms.

Owens (10) reexamined Army Alpha test scores collected in 1950 on 127 men who had taken the test as college freshmen in 1919. Both increases and decreases in scores were observed, but the changes from age 20 to age 50 were unrelated to initial ability levels. Hence Owens concludes that age is not kinder to the gifted few. No data exist as to the relationship after age 50.

A paired-associate learning test(11), given to 18 elderly psychiatric patients and a control group, was found to be sensitive to memory impairment, without dependence on intellectual functioning; problems of standardization were being investigated.

In a comparative performance test on older and younger subjects, Griew(12) presented stimuli from varying numbers (up to 8) of signal sources for simple reaction time. The performance of younger subjects did not seriously deteriorate until the number of signal sources reached 8, while that of older ones deteriorated when the number of alternative sources was increased from 1 to 2.

A few interesting plans concern retired professional persons. The American Association on Emeriti has listed about 13,000 emeriti, for whom employment or other benefits are sought. The entire full-time faculty of Hastings College of Law, San Francisco, are emeriti from famous law schools. Increased use of retirement-age professors has been recommended by several educational committees. This past year Judge Learned Hand, at age 87, completed 50 years' service as a Federal judge.

The AMA has urged physicians to adjust

fees for medical services and to encourage the development of suitable prepaid health plans for those over age 65. California Physicians Service recently adopted MD-Plan 65, designed to carry out these recommendations. About 33 states reported progress in elderly health care. Several writers have noted that many expenses listed as medical care really involve expenses of housing, food service, and home nursing care.

In the Scandinavian countries—67 is the national pension age—350 new homes for about 15,000 aged persons have been built in the past 10 years. A new career, with good pay and ample living quarters, for suitable women is that of director of an old age home, based on a 2-year training.

### **BIBLIOGRAPHY**

- 1. Chow, B.: Gerontologia, 2: 213, 1958.
- 2. Droller, H., and Dossett, J.: Geriatrics, 14: 367, 1959.
- 3. Settel, E.: J. Am. Geriat. Soc., 7: 416, 1959.
- 4. Birren, J. In: VA Prospectus. Research in Aging. Washington, D. C.: Veterans Administration, 1959.
- 5. Bowman, K. M., and Engle, B.: Geriatrics, 14: 163, 1959.
- 6. Friedman, M., and Rosenman, R.: J.A.M.A., 169: 1286, 1959.
- 7. Rechtschaffen, A.: J. Gerontol., 14: 73, 1959.
- 8. Rosenthal, H.: Am. J. Psychother., 13: 55, 1959.
- 9. Eisdorfer, C., Busse, E., and Cohen, L.: J. Gerontol., 14: 197, 1959.
- 10. Owens, W.: J. Gerontol., 14: 334, 1959.
  - 11. Inglis, J.: J. Ment. Sc., 105: 440, 1959.
  - 12. Griew, S.: Gerontologia, 2: 284, 1958.

# **EPILEPSY**

## WALTER J. FRIEDLANDER, M.D. 1

### PHYSIOLOGY

There is increasing evidence that the neurophysiological bases of seizures involve: a synchronization and an increase rate of firing of neuronal units and some

active relationship between excitatory and inhibitory processes (1, 2, 3, 4, 5, 6, 7, 8, 9). Cortical discharging foei may persist and propagate independent of any subcortical influence (10, 11) although some subcortical regions, particularly certain medial thalamic areas, can exert a marked in-

<sup>&</sup>lt;sup>1</sup> National Veterans Epilepsy Center, VA Hospital, Boston 30, Mass.

fluence on these cortical foci(12, 13, 14, 15); also, other brainstem areas may produce tonic seizures independent of cortical involvement(16, 17).

#### BIOCHEMISTRY

The metabolic steps of the glutamic acidgamma aminobutyric acid (GABA) cycle appear to be fairly well accepted: glutamic acid to GABA by the action of glutamic acid decarboxylase (GAD) plus pyridoxine; GABA plus alphaketoglutaric acid by the action of a transaminase plus, again, pyridoxine to succinic semialdehyde; then by a dehydrogenase (18, 19, 20) to succinate and then to glutamic acid. This succinate path is sufficient to account for all the GABA catabolism(21). Pyridoxine antagonists can cause seizures (22, 23, 24) which are stopped by the administration of B<sub>6</sub>. The comparative distribution of the transaminase and GAD is such as to suggest that the GAD is the limiting factor (25). The catabolic limb of this cycle involves a portion of the citric acid cycle; hence, it is suggested that the GABA cycle is primarily a regulator for available energy (26). Considerable doubt has been cast on GABA being the inhibitor neurohormone (27, 28, 29, 30) although most evidence points to it or some other naturally occurring amino acid having important inhibitory and/or excitatory effects on neurons (23, 31, 32, 33, 34, 35, 36, 37, 38). Its actual mechanism remains theoretical (39, 40, 41, 42).

Other biochemical studies report that: increase seizure susceptibility is inversely related to the ratio of extracellular to cellular sodium, directly related to the ratio of cellular to extracellular brain water and related to the rise in brain carbonic anhydrase with age and a reciprocal fall in total brain carbon dioxide(43); after an initial rise, the brain cholinesterase falls again as the animal ages(44); and GABA has an antagonistic effect on serotonin, at least in the guinea pig ileum(45).

#### PHARMACOLOGY

Dilantin unlike Spirodone, Tridione or phenobarbital has no effect on primary seizure foci but it, like Spirodone and phenobarbital, does limit cortical spread of sei-

zures (46). Although Dilantin has no effect on carbonic anhydrase, it has an additive effect with and is similar in raising threshold in hyponatremic mice as the carbonic anhydrase inhibitor methazolamide (47). • Dilantin, Thiantoin, Mesantoin, and Tridione in chronic (48) and acute (49) coses produces a reduction in brain acetylchcline. A single intravenous dose of Dilentin has its maximum effect in 15-30 minutes and then slowly falls off so that it is without effect after 8 hours (50). Diamox enters the brain first via the cerebrospinal fluid and is only later transported across the bloodbrain-barrier (51). Brain carbonic enhydrase may not be directly involved in the persistence of methazolamide's anti-convulsant action (52).

#### PATHOLOGY

Several pathological reports again atress the importance of lesions in Ammon's horn or the "entorhinal" area in psychomotor epilepsies (53, 54, 55, 56, 57, 58, 59, 60) although it is not settled whether the Ammon's horn lesions are primary or secondary (61).

#### CLINICAL

Mullan and Penfield conclude that generally, visual illusions or the sense of familiarity arise from the minor temporal lobe while auditory illusions and a sense of fear may arise from either temporal  $lob \in (62)$ . Paroxysmal disturbances of body mage may be associated with frontopariety-temporal lesions on the minor side (63). Experimental "psychomotor" seizures can be elicited from stimulation of the enterior or posterior limbic lobe (64). The precise pattern of a focal motor seizure is determined partly by anatomical location of the focus (and this may be at a considerable distance to the motor area) and by the parameters of stimulation (65). Nocturnal scizures are more frequently associated with mediobasal hippocampal foci than foci over the convexity (66). There was a positive family history in 12.5% of patients studied for a single seizure (67) and in 15% of patients with petit mal or 9% with focal seizures (68). Based on the incidence of evilence in Rochester, Minnesota, the estimated prevalence in the U. S. is 522,000-757,000

(69). The risk of having a "cryptogenic epileptic" child is increased in older primiparas(70). Four series(71, 72, 73, 74) reviewed 1,310 epilepsies of late onset. Convulsions in newborns (75) and cases with "hypsarrhythmia" (76) were reviewed; both carry poor prognoses. The height of the fever rather than the rate of rise may be the important factor in febrile convulsions (77). Antipyretics, particularly amidopyrine, may be an eleptic (78). Seizures may precede the diagnosis of brain tumor by many years (79). A number of cases of musicogenic epilepsy or related phenomenon are reported (80, 81, 82, 83, 84) as are patients with photosensitive epilepsy (85, 86). Five cases of "epileptic cephalea" are reported (87). Among reports of interesting cases of epilepsy are: 4 cases with paroxysmal "hypersexuality" with temporal lobe foci(88), epilepsy in one Siamese twin (89), nystagm's associated with psychomotor and focal seizures (90), familial epilepsy, albuminuria, and aminoaciduria (91), and familial epilepsy with aplasia of the corpus callosum(92). Differentiation between "anoxic convulsions" and epilepsy in children (93), temporal lobe and petit mal epilepsy(94), hypoglycemia and epilepsy(95), and vestibular seizures due to temporal cortical foci and vestibulogenic seizures due to stimulation of vestibular nuclei (96) are discussed. There is a high correlation of breech deliveries with idiopathic" epilepsy but not with epileptics having focal EEG abnormalities (97). Some other correlations are: 22% of 370 cases of cerebral palsy have convulsions (98); about 50% of patients with cerebral abscesses develop convulsions (99); 18% of children with supratentorial brain tumors (100) and 16% of patients with glioblastomas (101) have convulsions as their initial symptom: convulsions may occur very early-7 weeks of age(102)—and are frequent in children with cerebral angiomatous malformations; seizures are the initial symptoms in 44% of cases of porencephaly (103); 5.6% of cases of closed brain trauma develop epilepsy and this usually begins one-half to one year after the injury (104); 20% of patients with hypertensive encephalopathy (105), 20% of patients with carotid insufficiency (106), about 4% of patients with con-

genital or acquired arrtic stenosis (107). and 55% of patients with spontaneous intracerebral hematomata (108) have seizures; 95% of cases of Lissauer's paresis (109) and 21% of patients with various types of neurosyphilis (110) have seizures; convulsions are relatively common in cerebral paragonimiasis (111), exanthema subitum(112), and during the acute stages of Western Equine encephalitis (but not as a late sequelae)(113); about 3-4% of children with seizures also have migraine (114); seizures are uncommon as a neurological complication of leukemia (115): 18.2% of patients with systemic lupus ervthematosis have convulsions(116); 18% of post-prefrontal lobotomy (Freeman and Watts) who are still alive have had convulsions (117); 6% of patients with acute intermittent porphyria present with seizures(118); convulsions occur in 39% of cases with congenital toxoplasmosis (119); hyperinsulism though often thought of in the differential diagnosis of seizures, is actually the cause in less than 0.1%(120); 12% of cases of Coxsackie B in newborns have seizures (121); and 70% of cases of idiopathic hypoparathyroidism and 65% of cases of pseudohypoparathyroidism have convulsions (122). Among the rare causes of seizures are instances of hyperserotonemia (123), a "cerebral salt-wasting" syndrome believed due to sustained inappropriate release of antidiuretic hormone (124), pyridoxine-dependency (125) and a retained intracranial sewing needle that had been used in an attempted infanticide (126). Epilepsy associated with menstruation, pregnancy, puerperium or the menopause is discussed (127, 128, 129, 130); estrogens may increase irritable foci(131). A B-6 deficiency may be the etiology of "rumfits" (132); 45% of epileptics are reported to have a B-6 deficiency (133).

The value and dangers of pneumoencephalography in epileptics are discussed (134, 135, 136, 137). Epileptics have normal cerebrospinal fluid transaminase(138), cholesterol and cholesterol esters(139), and total calcium, chloride, potassium, sodium, magnesium, and inorganic phosphorus (140). Decrease serum mucoproteins may be found in patients with progressive familial myoclonic epilepsy(141). Many epi-

leptics have hyperactive thermal vestibular responses (142).

#### TREATMENT

New anticonvulsant drugs are: indolyethylpyridines which may act like serotonin (143); ethchlorvynol, a tertiary alcohol (144); Phenaglycodal, a substituted ethylene glycol(145); Elipten, a glutaride(146, 147); quinacrine and chloroquine(148, 149); PM 671(150) and PM 680(151), new succinamides; Ethoxzolamide, a carbonic anhydrase inhibitor(152); and Nydrane, a benzylamide (153). Results with Celontin(154), Trinuride(155), Hibicon (156), meprobamate (157, 158), ketogenic diet(159, 160), Diamox(161, 162), Dexadrine(163, 164), intravenous Xylocaine (165, 166), intravenous Dilantin(167), tubocurarine (for status) (168), and thymus extracts(169), are reviewed. The use of ipronazid is suggested (170, 171) which is interesting in light of convulsions being one of its known side effects. ACTH is of value in the treatment of "Gibbs' hypsarrhythmia" (172, 173, 174).

Toxic effects of Dilantin are reported as not being seen when the blood levels are less than 30 micrograms/ml.(175). Megaloblastic anemias due to some anticonvulsants are associated with normal serum B-12 levels (176) and normal absorption of folic acid(177); Dilantin may produce meningismus and a cerebrospinal fluid pleocytosis (178) or a parenchymatous cerebellar degeneration (179); Mesantoin may produce a clinical picture resembling infectious mononucleosis but without a raised heterophile titer(180); anticonvulsant drugs may mimic malignant lymphomas clinically and pathologically (181); Paradione(182) or Tridione(183) may cause a nephrosis; Mesantoin was considered responsible for the aplastic anemia in 3 out of 89 cases (184, 185); experimentally, meprobamate may produce seizures after withdrawal(186); cessation of prolonged induced sleep for the treatment of mental disorder has been followed by withdrawal convulsions (187). Among unexpected side effects of some anticonvulsants are: decreased typhoid agglutination titers after the administration of some barbiturates (188), an antithyroid activity of thiohydantoins(189), and a lowered oxygen consumption after administration of Diamox which is taken as evidence of antithyroid activity (190). Small doses of various phenothiazines given for a short period of time can produce "seizures" (191, 192, 193, 194) although these actually may be acute dystonias rather than epileptic seizures. In regard to the treatment of the various toxic conditions, antihistamines are reported again to be without value in Dilantininduced gingival hyperplasia (195), intravenous Tridione relieves seizures associated with severe Dilantin intoxication (196), and hemodialysis has been used successfully in the treatment of extreme Dilantin poisoning(197),

The results of hemispherectomy (198, 199) and electropallidoanostomy (200) are reported. A number of papers ciscuss the surgical treatment of temporal lobe epilepsy (54, 58, 59, 201, 202). There is frequently an improvement of the personality along with improvement of the seizures, particularly in patients with aggressive tendencies.

### PSYCHOLOGY AND SOCIOLOGY

The nature of epileptic interference with psychic function has been studied experimentally (203, 204). Certain psychological characteristics of epileptics are examined (205, 206, 207, 208, 209, 210). There may be greater disturbance in vocabulary than with abstract ability regardless of which temporal lobe is involved in psychomotor epilepsy(211). No changes in general intelligence or learning after temperal lobectomy on the nondominant side has been found in contrast to a decrease in auditory verbal learning ability if the dominant lobe was involved (212). Some psychological factors involved in bizarre seizures (213), the occurrence of autoscopic phenomena in some epileptic attacks (214), the value of recall during sodium amytal interview as a diagnostic aid in seizures (215) and the value of group meetings of families of epileptics (216) is considered.

The English laws regarding epilepsy and annulment of marriage (217) and some medico-legal aspects of epilepsy in the U. S. (218) are discussed. Of Norway's 20,000 epileptics, 50% are working (219). In the

Mayo Clinic's series of epileptics, 19% have made "superior" adjustments, 68% are self-supporting, 9% are partially dependent, and 4% are totally dependent; adjustment is not altered by type, frequency or duration of seizures (220). Exception has been taken to the admission of two more persons into the club of famous epileptics, Emperor Caligula (221) and St. Paul (222).

## BIBLIOGRAPHY

- 1. Enomoto, T. F., and Ajmone-Marsan, C.: EEG Clin. Neurophysiol., 10: 764, 1958.
- 2. Enomoto, T. F., and Ajmone-Marsan, C.: EEG Clin. Neurophysiol., 11: 199, 1959.
- 3. Gastaut, H., Naquet, R., and Rischer-Williams, M.: J. Nerv. Ment. Dis., 127: 21, 1958.
- 4. Jung, R., Creutzfeldt, O., and Grusser, O. J.: German Med. Monthly, 3: 269, 1958.
- 5. Konigsmark, B. W., Abdullah, A. F., and French, J. D.: EEG Clin. Neurophysiol., 10: 687, 1958.
  - 6. Li, C. L.: Science, 129: 783, 1959.
  - 7. Morrell, R. M.: Nature, 183: 979, 1959.
- 8. Schmidt, R. P., Thomas, L. B., and Ward, A. A., Jr.: J. Neurophysiol., 22: 285, 1959.
- 9. Symonds, C.: Proc. Roy. Soc. Med., 52:
- 9. Symonds, C.: Proc. Roy. Soc. Med., 32 395, 1959.
- 10. Petsche, H.: Wien Klin. Wschr., 69: 715, 1957, abstracted in Ex. Med. (VIII), 12: 40, 1959.
- 11. Maspes, P. E., Marossero, F., Migliore, A., and Infusc, L.: Minerva Neurochir., 2: 45, 1958, abstracted in Ex. Med. (VIII), 12: 444, 1959.
- 12. Andy, O. J., Chinn, R. McC., Allen, M. B., and Shawver, E. F.: Neurology, 8: 939, 1958.
- 13. Andy, O. J., and Mukawa, J.: EEG Clin. Neurophysiol., 11: 397, 1959.
- 14. Enomoto, T. F.: EEG Clin. Neurophysiol., 11: 219, 1959.
- 15. Mikailovic, L.: Experimentia, 15: 119, 1959.
- 16. Kreindler, A., Zuckermann, F., Steriade, M., and Chimion, D.: J. Neurophysiol., 21: 430, 1958.
- 17. Peters, J. J., Vonderahe, A. R., and Hehman, K. N.: Neurology, 9: 234, 1959.
- 18. Albers, R. W., and Salvador, R. A.: Science, 128: 359, 1958.
- · 19. Baxter, C. F., and Roberts, E.: J. Biol. Chem., 233: 1135, 1958.
- 20. Killam, K. F.: Fed. Proc., 17: 1018, 1958.
- 21. Wilson, W. E., Hill, R. J., and Koepper, R E.: J. Biol. Chem., 234: 347, 1959.

- 22. Gammon, G. D., and Kamrin, R.: A.M.A. Arch. Neurol. Psychiat., 81: 710, 1959.
- 23. Hayashi, T.: Nature, 182: 1076, 1958.
- 24. Rindi, G., Perri, V., and Ventura, U.: Nature, 183: 1126, 1959.
- 25. Albers, R. W., and Brady, R. O.: J. Biol. Chem., 234: 926, 1959.
- 26. McKhann, G. M., and Tower, D. B.: Am. J. Physiol., 196: 36, 1959.
- 27. Curtis, D. R., and Phillis, J. W.: Nature, 182: 323, 1958.
- 28. Elliott, K. A. C., and Jasper, H. H.: Physiol. Rev., 39: 383, 1959.
- 29. Elliott, K. A. C., and vanGelder, N. M.: J. Neurochem., 3: 28, 1958.
- 30. Kuffler, S. W., and Edwards, C.: J. Neurophysiol., 21: 589, 1958.
- 31. Curtis, D. R., Phillis, J. W., and Watkins, J. C.: J. Physiol., 146: 185, 1959.
- 32. Echlin, A., and Battista, A.: EEG Clin. Neurophysiol., 10: 766, 1958.
- 33. Grundfest, H.: Fed. Proc., 17: 1006, 1958.
- 34. Hayashi, T.: J. Physiol., 145: 570, 1959.
- 35. Irreverre, F., and Evans, R. L.: J. Biol. Chem., 234: 1438, 1959.
- 36. McLennan, H.: J. Physiol., 146: 358, 1959.
- 37. Ohara, K., Sano, I., Koizumi, H., and Nishinuma, K.: Science, 129: 1225, 1959.
- 38. Purpura, D. P., Girado, M., Smith, T. G., Callan, D. A., and Grundfest, H.: J. Neurochem., 3: 238, 1959.
- 39. Caspers, H.: EEG Clin. Neurophysiol., 11: 607, 1959.
- 40. Curtis, D. R., Phillis, J. W., and Watkins, J. C.: Nature, 183: 611, 1959.
- 41. Edwards, C., and Kuffler, S. W.: J. Neurochem., 4: 19, 1959.
- 42. vanHarreveld, A.: J. Neurochem., 3: 300, 1959.
- 43. Millichap, J. G., Balter, M., and Hernandez, P.: Proc. Soc. Exper. Biol. Med., 99: 6, 1958.
- 44. Bennett, E. L., Rosenzweig, M. R., Krech, D., Karlson, H., Dye, N., and Oblander, A.: J. Neurochem., 3: 144, 1958.
- 45. Hobbiger, F.: J. Physiol., 144: 349, 1958.
- 46. Morrell, F., Bradley, W., and Ptashne, M.: Neurology, 9: 492, 1959.
- 47. Gray, W. D., Rauh, C. E., Osterberg, A. C., and Lipchuck, L. M.: J. Pharm. Exper. Therapeut., 124: 149, 1958.
- 48. Bose, B. C., Gupta, S. S., and Sharma, S.: Arch. Int. Pharmacodyn., 117: 248, 1958.
- 49. Bose, B. C., Gupta, S. S., and Sharma, S: Arch. Int. Pharmacodyn., 117: 254, 1958.

50. Ensor, C. R., Bohner, B., and Chen, G.: Proc. Soc. Exper. Biol. Med., 100: 1331, 1959.

51. Roth, L. J., Schooler, J. C., and Barlow, C. F.: J. Pharm. Exper. Therapeut., 125: 128, 1959.

52. Gray, W. D., Lipchuck, L. M., and Ronsberg, M. A.: J. Pharm. Exper. Therapeut., 126: 24, 1959.

53. Cavanaugh, J. B.: Brain, 81:, 389, 1958.

54. Falconer, M. A.: Proc. Roy. Soc. Med., 51: 613, 1958.

55. Gastaut, H., Naquet, R., Meyer, A., Cavanaugh, J. B., and Beck, E.: J. Neuropath. Exp. Neurol., 18: 270, 1959.

56. Gastaut, H., Toga, M., Roger, J., and Gibson, W. C.: Epilepsia, 1: 56, 1959.

57. Haberland, C.: Psychiat. Neurol. (Basel), 135: 12, 1958, abstracted in Ex. Med. (VIII), 11: 964, 1958.

58. Hill, D.: Proc. Roy. Soc. Med., 51: 610, 1958.

59. Northfield, D. W. C.: Proc. Roy. Soc. Med., 51: 607, 1958.

60. Wyke, B. D.: Ann. Roy. Coll. Surg. England, 22: 117, 1958.

61. Scholz, W.: Epilepsia, 1:36, 1959.

62. Mullan, S., and Penfield, W.: A.M.A. Arch. Neurol. Psychiat., 81: 269, 1959.

63. Arseni, C.: Cretan, C., Botez, M., and Goldenberg, M.: Rev. Neurol., 97: 401, 1957, abstracted in Ex. Med. (VIII), 12: 325, 1959.

64. Hughes J. R.: EEG Clin. Neurophysiol., 11: 459, 1959.

65. Wyke, B. D.: Epilepsia, 1: 4, 1959.

66. Kajtor, F., and Nagy, T.: Orv. Hetil., 99: 600, 1958, abstracted in Ex. Med. (VIII), 12: 470, 1959.

67. Thomas, M. H.: J.A.M.A., 169: 457,

68. Yoss, R. E.: Proc. Staff Meet. Mayo Clin., 33: 475, 1958.

69. Kurland, L. T.: J. Chronic Dis., 8: 378, 1958.

70. Hertoft, P., Leinoe, L., and Simonsen, H.: Acta Psychiat. Neurol. Scand., 33: 296, 1958.

71. Raynor, R. B., Paine, R. S., and Carmichael, E. A.: Neurology, 9: 111, 1959.

72. Segelov, J. N., and Reid, W. L.: M. J. Australia, 2: 216, 1958.

 73. Sheehan, S.: Irish J. M. Sci., 6: 261, 1958.

74. Smith, W. T., and Wilson, W. P.: Sou. Med. J., 51: 889, 1958.

Cadhilac, J., Passouant, P., and Ribstein,
 EEG Clin. Neurophysiol., 11: 604, 1959.

76. Bower, B. D., and Jeavons, P. M.: Lancet, 1: 605, 1959.

77. Millichap, J. G.: Pediatrics, 23: 76, 1959.

78. Hrbek, A.: Ann. Paediat., 188: 162, 1957, abstracted in Ex. Med. (VIII), 12: 203, 1959.

79. Strobos, R. R. J., Alexander, E., and Masland, R. L.: Dis. Nerv. System, 19: 518, 1958.

80. Anastasopoulos, Yannoulis, and Diekojiannis: Mschr. Ohrenheilk, 92: 191, 1358, abstracted in Ex. Med. (VIII), 12: 597, 1359.

81. Hasaerts, R., and Titeca, J.: Ann. Med. Psychol., 1: 555, 1958, abstracted in Ex. Med. (VIII), 12: 470, 1959.

82. Mischaux, L., Koupernik, C., and Labet, R.: Sem. Hop. Paris, 34: 9, 1958, abstracted in Ex. Med. (VIII), 12: 470, 1959.

83. Piotrowski, A.: EEG Clin. Neuro-physiol., 11: 176, 1959.

84. Reifenberg, E.: Psychiat. Neurol. Lied. Psychol., 10: 88, 1958, abstracted in Ex. Med. (VIII), 12: 470, 1959.

85. Daly, D., Seikert, R. G., and Burke, E. C.: EEG Clin. Neurophysiol., 11: 141, 1959.

86. Schaper, D.: EEG Clin. Neurophysiol., 11: 609, 1959.

87. Halpern, L., and Bental, E.: Neurology, 8: 615, 1958.

88. vanReeth, P. C., Dierkeno, J., and Luminer, D.: Acta Neurol. Psychiat. Belg., 58: 194, 1958.

89. Brown, I.H.: EEG Clin. Neurophysiol., 11: 565, 1959.

90. Infuso, L., and Migliore, A.: EEG Clin. Neurophysiol., 11: 384, 1959.

91. Joseph, R., Ribierre, M., Job, J. C. and Girault, M.: Arch. franc. pediat., 15: 374, 1958, abstracted in M. S. Abst., 3: 253, 1958.

92. Ziegler, E.: Helv. Paed at. Acta, 13: 169, 1958, abstracted in Ex. Med. (VIII), 12: 676, 1959.

93. Gastaut, H., and Gastaut, Y.: EEG Clin. Neurophysiol., 10: 607, 1958.

94. Aird, R. B., and Tsubaki, T.: J. Nerv. Ment. Dis., 127: 400, 1958.

95. Garland, H.: Proc. Roy. Soc. Med., 51: 53, 1958.

96. Behrman, S., and Wyke, B. O.: Brain, 81: 529, 1958.

97. Churchill, J. A.: EEG Clin. Neurophysiol., 11: 1, 1959.

98. Skatvedt, M.: Acta Paediat., 47: 706, 1958.

99. Kerr, F. W. L., King, R. B., and Meagher, J. N.: J.A.M.A., 168: 868, 1958.

100. Bergstrand, C. G., Bergstedt, J., and Herrlin, K. M.: Acta Paediat., 47: 688, 1958.

101. Frankel, S. A., and German, W. J.: J. Neurosurg., 15: 489, 1958.

102. Gerhard, A. M., and Thelander, H. E.: J. Pediat., 53: 586, 1958.

103. Naef, R. W.: A.M.A. Arch. Neurol. Psychiat., 80: 133, 1958.

104. Dereux, J., and Dereux, J. F.: Rev. Oto-neuro-opathal., 30: 48, 1958, abstracted in Ex. Med. (VIII), 12: 667, 1959.

105. Hudson, A. J., and Hyland, H. H.: Ann. Int. Med., 49: 1049, 1958.

106. Keirns, M. M., and Whiteleather, J. E.: Am. J. Roentz., 81: 929, 1959.

107. Swanson, P. D.: Bull. Johns Hopkins Hosp., 103: 287, 1958.

108. Silverman, D., Groff, R. A., and Sagen, W.: Neurology, 9: 75, 1959.

109. Newmann, M. A.: J. Neuropath. Exp. Neurol., 18: 337, 1959.

110. Ferriss, G. S.: Dis. Nerv. System, 20: 156, 1959.

111. Diaconita, G., Goldis, G., and Nagy, P.: Acta Med. Scand., 159: 155, 1957.

112. Broberger, O.: Nord. Med., 59: 523, 1958, abstracted in Ex. Med. (VIII), 11: 1156, 1958.

113. Smadel, J. E., et al.: Neurology, 8: 873, 1958.

114. Suter, C., Klingman, W. O., Austin, H., and Lacy, O. W.: Dis. Nerv. System, 20: 9, 1959.

115. Hunt, W. E., Bouronele, B. A., and Meagher, J. N.: J. Neurosurg., 16: 135, 1959.

116. Copeland, G. D., vonCapeller, D., and Stern, T. N.: Am. J. Med. Sci., 236: 318, 1958.

117. Freeman, W.: Sth. Med. J., 51: 739, 1958.

118. Goldberg, A.: Q. J. Med., 28: 183, 1959.

119. Feldman, H. A.: Pediatrics, 22: 559, 1958.

120. Mulder, D. W., and Rushton, J. G.: Neurology, 9: 288, 1959.

121. Kibrick, S., and Benirschke, K.: Pediatrics, 22: 857, 1958.

122. Bronsky, D., Kushner, D. S., Dubin, A., and Snapper, I.: Medicine, 37: 317, 1958.

123. Southren, A. L., Warner, R. R. P., Christoff, N. I., and Weiner, H. F.: New. Eng. J. Med., 260: 1265, 1959.

124. Epstein, F. H., and Levitin, H.: J. Clin. Invest., 38: 1001, 1958.

125. Sokoloff, L., Lassen, N. A., McKhann, G. M., Tower, D. B., and Albers, W.: Nature, 183: 751, 1959.

126. Gerlach, J., and Jensen, H. P.: Zbl. Neurochir., 18: 127, 1958, abstracted in Ex. Med., 12: 391, 1959.

127. Dimsdale, H.: Brit. Med. J., 2: 315, 1958.

128. Dutertre, F., Faure, J., Loiseau, P., Got, M., des Termes, H., and Fressy, J.: EEG Clin. Neurophysiol., 10: 757, 1958.

129. Loiseau, P., Dutertre, F., Guerin, A., des Termes, H., and Faure, J.: EEG Clin. Neurophysiol., 10: 759, 1958.

130. Rogers, J.: New Eng. J. Med., 259: 770, 1958.

131. Logothetis, J., Harner, R., Morrell, F., and Torres, F.: Neurology, 9: 352, 1959.

132. Lerner, A. M., DeCarle, L. M., and Davidson, C. S.: Proc. Soc. Exper. Biol. Med., 98: 841, 1958.

133. Calvario, M.: Acta Vitamin, 12: 23, 1958, abstracted in Ex. Med. (VIII), 12: 599, 1959

134. Etter, L. E., and Younger, E. L.: Radiology, 70: 23, 1958.

135. Falk, B., Kirsten, L., Lofstedt, S., and Silfverskiold, B. P.: Acta Psychiat. Neurol. Scand., 33: 440, 1958.

136. Guest, M., and Jones, D. P.: Canad. M. A. J., 79: 170, 1958.

137. Hagberg, B., Hamfelt, A., Holmdahl, M. H., and Lodin, H.: Acta Paediat., 48: 1959, supplement 117, pg. 61.

138. Brodell, H. L., Randt, C. T., Morledge, J. H., and Goldblatt, D.: J. Lab. Clin. Med., 53: 906, 1959.

139. Green, J. B., Papadopoulos, N., Cevellos, W., Forster, F. M., and Hess, W. C.: J. Neurol. Neurosurg. Psychiat., 22: 117, 1959.

140. Plum, C. M.: Acta Psychiat. Neurol. Scand., 33: 477, 1958.

141. Millar, J. H. D., and Neill, D. W.: Epilepsia, 1: 115, 1959.

142. Puca, A., Catapano, V. D., and Angelillo, F.: Acta Neurol. (Napoli), 13: 120, 1958, abstracted in Ex. Med. (VIII), 12: 39, 1959.

143. Mirsky, J. H., White, H. D., and O'Dell, T. B.: J. Pharm. Exper. Therapeut., 125: 122, 1959.

144. Carter, C. H.: Epilepsia, 1: 110, 1959.

145. Carter, C. H.: Antibiot. Med. Clin. Therapy, 5: 675, 1958.

146. Fabisch, W.: J. Ment. Sci., 105: 448, 1959.

147. Lambroc, V. S.: Dis. Nerv. System, 19: 349, 1958.

148. Miller, R. A.: Scottish, M. J., 3: 441, 1958, abstracted in J.A.M.A., 169: 1000, 1959.

149. Vazquez, H. J., Hojman, N., and Quiroga, F. E.: Semana Med., 66: 92, 1959, abstracted in J.A.M.A., 170: 1121, 1959.

150. Zimmerman, F. T., and Burgemeister, B. B.: Neurology, 8: 769, 1958.

151. Trolle and Kiorboe (Foreign Letters, Denmark): J.A.M.A., 170: 97, 1959.

152. Solomon, S., and Hirans, A.: Neurology, 9: 167, 1959.

153. Kaye, N., Jones, I. H., and Warrier, G. K.: Brit. Med. J., 1: 627, 1959.

154. Scholl, M. J., Abbott, J. A., and Schwab, R. S.: Epilepsia, 1: 105, 1959.

155. Sharpe, D. S., Dutton, G., and Mirrey, J. R.: J. Ment. Sci., 104: 834, 1958.

156. Remesova, E. S., and Kantina, E. A.: Z. Nevropat. I Psikhiat., 58: 171, 1958, abstracted in Ex. Med. (VIII), 12: 40, 1959.

157. Ivanov, A. A.: New York State J. Med., 58: 2529, 1958.

158. Naef, R. W., Schlesinger, N. S., and Borkowski, W. J.: A.M.A. Arch. Neurol. Psychiat, 80: 326, 1958.

159. Keith, H. M.: Journal-Lancet, 78: 461, 1958.

160. Peterman, M. G.: Minnesota Med., 41: 196, 1958.

161. Ross, L. P.: Lancet, 2: 1308, 1958.

162. Ungerleider, J. T.: Am. J. Psychiat., 115: 81, 1958.

163. Hertoft, P.: Ugesk. laeger, 120: 1363, 1958, abstracted in J.A.M.A., 169: 648, 1959.

164. Logothetis, J.: Minnesota Med., 42: 248, 1959.

165. Bohm, E., Flodmark, S., and Petersen, L.: A.M.A. Arch. Neurol. Psychiat., 81: 550, 1959.

166. Taverner, D., and Bain, W. A.: Lancet, 2: 1145, 1958.

167. McWilliam, P. K. A.: Lancet, 2: 1147, 1958.

168. Nisbet, H. L. A.: Br. Med. J., 1: 95, 1959.

169. Alexianu Buttu, G., and Savovici-Buttu, M. A.: Arch. E. Maragliano Pat. Clin., 14: 441, 1958, abstracted in Ex. Med. (VIII), 12: 473, 1959.

170. Lessin, A. W., and Parkes, M. W.: Br. J. Pharmacol., 14: 108, 1959.

171. Prockop, D. J., Shore, P. A., and Brodie, B. B.: Experimentia, 15: 145, 1959.

172. Gastaut, H., Gibson, W. C., Pitot, M., and Vigouroux, M.: EEG Clin. Neurophysiol., 11: 603, 1959.

173. Low, N. L.: Pediatrics, 22: 1165, 1958.

174. Sorel, L., and Dusaucy-Bauloye, A.: Acta Neurol. Psychiat., 58: 130, 1958.

175. Schiller, P. J., and Buchthal, F.: Dan. Med. Bull., 5: 161, 1958, abstracted in Ex. Med. (VIII), 12: 599, 1959.

176. Gordin, R.: Acta Med. Scand., 162: 401, 1958.

177. Chanarin, I., Elmes, P. C., and Mollin, D. L.: Br. Med. J., 2: 80, 1958.

178. Dutton, P.: J. Ment. Sci., 104: 1165, 1958.

179. Utterback, R.: A.M.A. Arch. N∋urol. Psychiat., 80: 180, 1958.

180. Ippen, H.: German Med. Monthly, 4: 130, 1959.

181. Saltzstein, S. L., and Ackerman, L. V.: Cancer, 12: 164, 1959.

182. Finkel, K. C., and Israels, S.: Journal-Lancet, 76: 243, 1959.

183. Heymann, W.: Pediatrics, 22: 614, 1958.

184. Mohler, D. N., and Leavel, L. S.: Ann. Int. Med., 49: 326, 1958.

185. Scott, J. L., Cartwright, G. E. and Wintrobe, M. M.: Medicine, 38: 119, 1959. 186. Essig, C. F.: A.M.A. Arch. Neurol.

187. Azima, H.: Dis. Nerv. System 19: 523, 1958.

Psychiat., 80: 414, 1958.

188. Cozzo, G., and Stocchi, F.: Lav. Neuropsichiat., 20: 194, 1957, abstracted in Ex. Med. (VIII), 12: 330, 1959.

189. Kilpatrick, R., Elmore, D. T. and Wood, D. R.: Br. J. Pharmacol., 13: 350, 1958.

190. Tenney, S. M., and Tschetter N.: Am. J. Med. Sci., 237: 23, 1959.

191. Graff, T. D., Phillips, O. C. and Gentry, W. D.: J.A.M.A., 169: 834, 1959.

192. Gunter, M. J.: Ohio St. Med. J., 54: 51, 1958.

193. O'Hara, V. S.: New Eng. Med. J., 259: 826, 1958.

194. Shaw, E. B., Dermott, R. V., Lee, R., and Burbridge, T. N.: Pediatrics, 23: 485, 1959.

195. Sturmer, F. C.: New Eng. J. Med., 259: 485, 1958.

196. Smith, B., and Mayle, F.: EEG Clin. Neurophysiol., 10: 779, 1958.

197. Schreiner, G.: Arch. Int. Med 102: 896, 1958.

198. Obrador Alcalde, S.: An. Acac. Nac. Med. (Madr.), 75: 109, 1958, abstracted in Ex. Med. (VIII), 12: 615, 1959.

199. Ransohoff, J., and Carter, S.: A.M.A. Arch. Neurol. Psychiat., 80: 325, 1958.

200. Spiegel, E. A., Wycis, H. T., and Baird, H. W. III: Neurology, 8: "34, 1958.

201. Fasano, V. A., and Broggi, G.: Arch. Psychiat. Nervenkr., 195: 502, 1957, abstracted in Ex. Med. (VIII), 11: 893, 1958.

202. Alajouanine, T., Nehlil, J., and Houdrat, R.: Rev. Neurol., 98: 165, 1958.

203. Morrell, F., and Torres, F.: EEG Clin. Neurophysiol., 10: 764, 1958.

204. Stamm. J. S., Pribam, K. H., and Obrist, W.: EEG Clin. Neurophysiol., 10: .766, 1958.

205. Aaronson, B. S.: J. Clin. Psychol., 14: 18, 1958.

206. Angers, W. P.: J. Gen. Psychol., 58: 225, 1958.

207. Dalla Barba, G.: Arch. Psichol. Neurol. Psichiat., 18: 541, 1957, abstracted in Ex. Med. (VIII), 12: 207, 1959.

208. Pernstich, G.: Wien Klin. Wschr., **69**: 700, 1957, abstracted in German Med. Monthly, **4**: 176, 1959.

209. Sal y Fosas, F.: Rev. Psiquiat. Peruana, 1: 3, 1957, abstracted in Ex. Med. (VIII), 11: 644, 1958.

210. Spitznagel, A.: Z. Psychother. Med. Psychol., 8: 30, 1958, abstracted in Ex. Med. (VIII), 12: 41, 1959.

211. Roberts, A. C.: Dis. Nerv. System, 19: 469, 1958.

212. Meyer, V.: A.M.A. Arch. Neurol. Psychiat., 81: 299, 1959.

213. Chafetz, M. E., and Schwab, R.: Psychosom. Med., 21: 96, 1959.

214. Lukianowicz, N.: A.M.A. Arch. Neurol. Psychiat., 80: 199, 1958.

215. Collings, H.: A.M.A. Arch. Neurol. Psychiat., 80: 408, 1958.

216. Kamin, S. H., Jackson, C., and Sledge, W. L.: J. Pediat., 53: 410, 1958.

217. Foreign Letters, United Kingdom, J.A.M.A., 168: 435, 1958.

218. Perr, I. N. : J. Nerv. Ment. Dis., 128 : 262, 1959.

219. Foreign Letters, Norway, J.A.M.A., 170: 843, 1959.

220. Mulder, D. W.: Proc. Staff Meet. Mayo Clin., 33: 467, 1958.

221. Sandison, A. T.: Med. History, 2: 202, 1958.

222. Stern, A.: Psychiat. Neurol. (Basel), 133: 276, 1957, abstracted in Ex. Med. (VIII), 11: 1237, 1958.

# PSYCHIATRIC SOCIAL WORK

#### MARGARET L. NEWCOMB 1

Psychiatric Social Work continues to extend significantly, its services in the field of mental health, and to clarify and define areas of practice through experience and study. These areas range from the conceptualized roles in working with mentally disturbed patients in individual treatment, to leadership as consultants and directors in the development of broad mental health programs for prevention and treatment. Throughout, the patient is envisioned as a family member in a social community. Thus, in keeping with the interest of this profession in treatment of psychiatric maladjustment as well as in the prevention of illness, the roles now extend from that of casework therapist to community organizer for mental health.

Two areas within which psychiatric social work is progressing rapidly, are group therapy and social research. After years of training with psychiatrists in

<sup>1</sup> Chief, Social Work Service, VA Hospital, Boston 30, Mass.

group dynamics, beginning as members of a group, then as observers, co-leaders, and leaders with psychiatric consultation, workers have gained confidence in dealing with complex multiple transference and countertransference elements. They now are able to facilitate group movement for more adequate social readjustment. The limited number of psychiatric social workers in relation to the current demand within the rapidly mushrooming mental health programs is giving impetus to the use of group process. The skilful application of the techniques of group dynamics enables each worker to make better use of himself as a catalyst, not only in work with patients toward health, but also in such roles as consultant or mental health organizer, in . motivating groups to work together for community programs(1).

The responsibility of a professional group to test the effectiveness of the underlying principles and techniques of its accepted practice, is now being assumed more actively. Supplementary advanced training in

research methods is available through inservice training, post graduate third year and doctoral levels. Social workers are participating in the varied research projects of many psychiatric clinics and hospitals in collaboration with psychiatrists, psychologists and members of other disciplines. Follow up studies evaluate the social readjustment of specialized patient groups selected frequently either by diagnostic or treatment categories. Research concerning the professional practice of psychiatric social work, itself, also is being conducted. The many intangibles and variables present in multiple human reactions create obvious difficulties for objective study which, we hope, will be surmountable. Through structured research design, the purpose is the isolation and testing of certain basic concepts underlying interpersonal therapeutic casework relationships to enhance and improve practice.

Because of the continuously increasing demand for professionally trained psychiatric social workers in comparison with the existing supply, present practice and training are being thoroughly examined in all dimensions. The curriculum of both undergraduate and graduate programs is being reviewed. What social work content can be taught in undergraduate colleges? Can areas of practice be specifically defined for different levels of training for social work aides, technicians, and social workers? How would social work content introduced to the undergraduate affect academic training of the graduate student?

Concurrent with this examination has been the analysis of the content taught for the Master's degree in social work for the "specializations" such as psychiatric and medical. As a result, the content formerly taught primarily to psychiatric social workers will be taught for the most part, in the general curriculum in the 49 approved schools.

Schools wishing to give more intensive preparation for this field of practice will place special emphasis on the modification of social casework or social group work in the psychiatric setting; the working relationship with other members of the psychiatric team; the import of the psychiatric diagnosis of the patient and his family; and a detailed knowl-

edge of the community's provisions for the care and treatment of the mentally ill(2).

It was estimated in 1946, when the National Mental Health Act was passed that there would be a need for approximately 15,000 psychiatric social workers to provide necessary services in clinics and hospitals. Consistent with the effort to meet the existing unfilled positions throughout the United States, especially for state mental Hospitals, vigorous recruitment efforts are currently under way. Undergracuate students, usually majoring in sociology or psychology are supervised as case aids to interest them in entering the field. Career programs with paid summer field work have been initiated. Lectures, discussion groups and literature are some of the m∈thods utilized in this intensive effort to recruit. It was estimated by the Council of Social Work Education that the number of students enrolled in the psychiatric programs of the schools of social work for the academic year 1958-1959 was 1,062, more than a two-thirds increase from the 305 enrolled in 1947. The Federal Scholerships Program has been a large factor in stimulating interest and enabling qualified people to enter the profession.

The following two manuscripts are suggested as important presentations of the progress of psychiatric social work: I. The comprehensive study prepared for publication in the Social Work Yearbook, on Psychiatric Social Work, by Daniel E. O'Keefe, covers the growth, development and the current trends of this "specialization," including professional education, the professional association—the National Association of Social Workers, and the stimulus of the Mental Health Grants Program of the National Institute of Mental Health.

2. An Institute in teaching methods for faculty members of all schools having psychiatric social service programs was held in 1957, with Charlotte Towle, Leader. The Proceedings of this Institute, entitled "The Case Method in Teaching Social Work," was published in 1959. It deals with basic assumptions of professional education and the use of the case material for classroom and field work instruction (3).

Further experience and study will pro-

duce additional crystalization of practice. As increased identity as a profession is achieved, proportionate gains in the value of the unique contributions of psychiatric social workers will be noted in the field of mental health.

#### BIBLIOGRAPHY

1. Newcomb, M. L.: Progress in Psychiatric Social Work Treatment. *In* Progress in Psychotherapy, IV, J. Masserman, M.D., and

- J. Moreno, M.D., editors. New York: Grune & Stratton, 1959.
- 2. O'Keefe, Daniel E.: Psychiatric Social Work, to be published in Social Work Yearbook, National Association of Social Workers, New York.
- 3. Towle, Charlotte: The Case Method in Teaching Social Work. Proceedings of the Institute on the Use of the Case Method in Teaching Psychiatric Social Work, 1957. Published 1959.

### MENTAL HEALTH IN EDUCATION

W. CARLSON RYAN, Ph.D.1

Educators belong in the mental health group, says the World Health Organization in a recent report:

Children are entrusted to their care for ten to twelve years—the most essential, perhaps, of their lives. Psychological insight is necessary to deal with the different personalities to be found in a classroom, and the various difficulties they experience in learning and in behaving in a social group (1).

### And Dana L. Farnsworth says:

If teachers and administrative officers convey attitudes of friendliness, warmth, and insistence on basic integrity and high intellectual standards to their students the quality of each individual's experience in college is quite different from that of the student who feels that his instructors are aloof, impatient of him, and interested only in their subject and private affairs (2).

Moreover, as Dr. R. H. Felix, Director of the National Institute of Mental Health, United States Public Health Service, points out, "the growing interest of educators in the mental health aspects of their work has led to a marked increase in research and program development in this field" (3). The studies that have been made, he says, suggest also that perhaps we need to broaden our outlook to include, along with other factors, study of the school as a social system which affects the mental health of children. "This means," Dr. Felix adds, "that we must investigate the effects on children of such aspects of the overall

school program as its organization and administration, the relationships among the school staff (including non-teaching staff), varying perceptions of staff roles, and methods of staff communication."

Dr. Felix stresses the necessity for emphasis on "positive mental health, on the preservation and promotion of the health of all the children in the school." He notes that since the end of World War II school systems have become one of the largest employers of mental health personnel; also that at the same time the mental health professions have been intensifying their interest in schools as a vital place to study the development of children and new ways of reaching them before they develop serious problems. "What happens to a child in school helps to determine how he will be able to meet the stresses and demands of life."

To what extent are mental hygiene services provided for children in public and private schools? Dr. David Abrahamsen, consultant for the New York State Department of Mental Hygiene, who has studied both types of schools since 1955, concludes in his 1959 report that "relatively speaking, private schools show a greater number of emotionally disturbed children than do public schools"(4). He points out, however, that the private schools have better access to psychiatric help, primarily because their children are of a higher economic status. While the public schools have only one psychiatrist for every 50,000 children, one psychologist for every 11,000, and one psychiatric social worker for every

<sup>&</sup>lt;sup>1</sup> Univ. of North Carolina, Chapel Hill, N. C.

38,500, the private schools have one psychiatrist for every 2500 children, one psychologist for every 950, and one psychiatric social worker for every 11,000. "With respect to mental hygiene facilities," he says, "public elementary and secondary schools do not compare favorably with private schools, though the latter, too, fall short of their needs." And he adds: "A child learns when he is emotionally happy; it is this happiness that every educator, whether he is in a private of a public school, has to further."

Considerable attention has been given recently to emotional pressures on teachers. While workers in business and industry have secured a 40-hour week, Louis Kaplan points out in his recent book, and are contemplating even a further reduction in working hours, teachers spend from 45 to 52 hours per week on their jobs or in jobrelated activities. Moreover, this author adds, "not only do teachers work longer hours than most wage-earners, they are under constant emotional pressure. Classes are large, and there is hardly a moment of the day when the teacher is free from children" (5).

Special attention has been given recently to mental health as part of the preparation of other professional workers besides those in education. Mental health in professional education is one of the projects specifically designated for World Mental Health Year, 1960, and a preliminary report on the subject was presented to the World Federation for Mental Health at the meeting held in Barcelona, Spain, in the summer of 1959. This report indicated a growing concern for mental hygiene as part of the preparation of professional workers in all fields—medicine, dentistry, public health, nursing, social work, law, ministry, business, and

other fields, as well as education. At the Harvard University Medical School students have a one-year course in "Growth and Development," covering both somatic and psychological aspects. Mental health is also represented in a Harvard program for the education of "community health specialists." Another area where there have been significant developments in mental health education is that of the church and religion. Colgate-Rochester Divinity School, for example, has an arrangement whereby the school shares the expense of a hospital chaplain trained in mental hygrene who gives a course in clinical training during the academic year and a summer course at the hospital. An example of mental hygiene in legal education is that of the University of Oklahoma, where the instructor in criminal law makes regular use of the Central State Hospital in instructing law school students. The report at Barcelona characterized mental hygiene instruction as essential in professional education today, concluding that "unless the professional schools recognize this and incorporate mental health into their programs they cannot prepare adequately for professions in the modern world."

### BIBLIOGRAPHY

- 1. World Health: May-June 1959 (Special issue on mental health).
- 2. Farnsworth, Dana L.: Mental Hygiene, 43: 568-76, Oct. 1959.
- 3. Felix, Robert H.: Foreword to Basic Approaches to Mental Health. Washington, D. C.: American Personnel and Guidance Association, 1959.
- 4. Abrahamsen, David: Mental Hygiene, 43: 281, April 1959.
- 5. Kaplan, Louis: Mental Health and Human Relations in Education. New Tork: Harper & Brothers, 1959.

#### PSYCHIATRIC NURSING.

### MARY F. LISTON, R.N.1

Considerable progress continues in psychiatric nursing with emphasis on the application of clinical skills in psychiatric

nursing practice, the study of psychiatric nursing content in the basic nursing curriculum, the improvement of nursing services and in the educational preparation of psychiatric aides.

<sup>&</sup>lt;sup>1</sup> National League for Nursing, Inc., 10 Columbus Circle, New York 19, N. Y.

The Council on Psychiatric and Mental Health Nursing program meeting at the National League for Nursing Biennial Convention in May 1959 was devoted to a presentation of three papers concerned with nurse-patient interaction in clinical psychiatric nursing(1). In a second session at the convention the council members discussed the preparation of psychiatric aides(2). Panel participants included psychiatric nurses and a psychiatric aide.

A review of the Council Newsletter items on the activities of state and local councils indicate a wide range of interests and activities for council members. Topics included for discussion and workshop sessions were remotivation, followup care of discharged patients, education of psychiatric aides, community mental health resources, integration of mental health concepts in the basic nursing curriculum, special clinical problems in psychiatric nursing. improved communication between nursing service and nursing education, the care of the psychiatric patient in the general hospital and a wide range of other topics (3). A report "Suggested Core Curriculum for Pre-Service Education of Practical Nurses and Psychiatric Attendent Nurses" has been issued by the Inter-Council Committee of the Councils on Psychiatric and Mental Health Nursing and Practical Nursing of the Michigan League for Nursing.

The first afternoon session devoted exclusively to the presentation of papers on clinical psychiatric nursing at the annual American Psychiatric Association meeting in April 1959 was enthusiastically received by all present(4).

Nursing educators continue to focus on the identification and integration of mental health and psychiatric nursing concepts in the basic nursing curriculum. A project, financed by the National Institute of Mental Health and sponsored by the National League for Nursing, involving a series of five regional conferences and a national working conference concerned with the content and process of integration was concluded during the year. The reports of the regional conferences in this project have been published in "Concepts of the Behavioral Sciences in Basic Nursing Education" (5). The final report of the working con-

ference will be available early next year.

The program of nursing service consultation of the National League for Nursing through the Department of Hospital Nursing continues to implement an active program of consultation for the purpose of improving patient care through the improvement of nursing services. Initial visits were made to state and voluntary psychiatric hospitals in Pennsylvania; followup visits to hospitals in the Rocky Mountain area. Two-day institutes for all nursing personnel devoted to the subject of "Feelings and Attitudes in Psychiatric Patient Care" were held in conjunction with the followup visits.

Considerable attention has been directed toward the role of the public health nurse in the followup care of the mentally ill. Areas of special interest are the mental health training programs for public health nurses (6) and the activities of the public health nurse in direct care of patients. The use of a part-time psychiatric consultant and a full-time mental health nursing consultant in a visiting nurse service has proven very helpful to the nurses in working with emotionally ill patients in their caseload(7). Such opportunity has also given them increased appreciation of the mental health role of the nurse with all patients. A monograph "Released Mental Patients on Tranquilizing Drugs and the Public Health Nurse" presents an intensive study in the followup care of discharged patients

The educational preparation, functions and evaluation of the psychiatric aide continues to be a focal area of interest for psychiatric nurses. The Correspondent, a newsletter published by the National League for Nursing on a subscription basis for psychiatric aides, attendants technicians and practical nurses, has entered its second year(9).

An interesting study on the evaluation of the psychiatric aide indicates the need for careful use of rating tools. The authors suggest that "the use of an objective standardized instrument for obtaining the observation of nurse supervisors is felt to be superior to the usual impressionistic methods in evaluating aide performance" (10, 11).

The result of intensive investigation by a

working committee of the National League for Nursing and extensive review by nurses and their co-workers throughout the country culminated in the publication "Suggestions for Experimentation in the Education of Psychiatric Aides" (12). This material should prove useful to nurses interested in experimenting with preservice programs for aides as well as for on-the-job training and inservice programs.

The Seminar Project for Teachers of Psychiatric Aides supported by the National Institute of Mental Health and sponsored jointly by the American Psychiatric Association and the National League for Nursing, has completed seminars in North and South Carolina. Thus far 114 nurses from these states have been enrolled in the seminars designed to improve the inservice education for aides. During the coming year seminars will be conducted in Arkansas and Tennessee and a final evaluation of the project will be completed in September 1960.

At the APA Mental Hospitals Institute in October 1958, the Training of Ward Personnel (13) was discussed. Considerable interest was indicated in the role expectations various co-workers have for aides. Several illustrations of aide training programs in state and other psychiatric hospitals were described.

Psychiatric nurses are vitally concerned with the application of clinical skills in psychiatric nursing practice. Emphasis has been placed on the roles of mothering, listening and playing in the nursing care of a child hospitalized in a psychosomatic unit of a hospital(14). The nurse's skill and ability in working with patients expressing characteristics of hopelessness and aggressive behavior will have great meaning for hospitalized patients(15, 16). Patients with special nursing problems such as the geriatric patient offer great challenge to all personnel in psychiatric nursing(17).

In a discussion of the psychiatric nurse's relationship with the patient, Farrar states "a prime requisite as being tolerant adaptability to all sorts and conditions. Tolerant adaptability with the purpose of engaging patient's trust and cooperation, of relieving symptoms and even, if possible, modifying unwholesome attitudes" (18). The import-

ance of all psychiatric team members working toward the common goal of improved patient care is stressed in a discussion of the working partnership of the psychiatrist and the nurse (19).

Changing patterns and philosophy of psychiatric care have fostered the need-for new roles for nursing personnel (20). Nurses are becoming effectively involved as leaders in group psychotherapy in selected settings (21).

Continuing interest has been focussed on the role and function of the clinical specialist in psychiatric nursing (22). The interaction between patients and nursing personnel with emphasis on a method for study of the process has been an additional area of concern (23).

Psychiatric nurses have indicated through their group activities, publications and research studies the need to further clarify and define the role of the nurse in psychiatric settings and the role of the nurse in the care of the discharged psychiatric patient. Much has been accomplished, but there are many areas in need of continuing investigation and study.

#### **BIBLIOGRAPHY**

- 1. NLN.: Three Reports of Nurse-Patient Interaction in Psychiatric Nursing. NLN Mental Health and Psychiatric Nursing Advisory Service, 1959.
- 2. Council on Psychiatric and Mental Health Nursing, NLN.: Newsletter, 6: June 1959.
- 3. Council on Psychiatric and Mental Health Nursing, NLN.: Newsletter, 5: Dec. 1958; 6: March, June, Sept. 1959.
- 4. Council on Psychiatric and Mental Health Nursing, NLN.: Newsletter, 6: June
- 5. NLN.: Concepts of the Behavicral Sciences in Basic Nursing Education. New York, 1958
- 6. Kingcade, Mildred E.: Nursing Cutlook, 6: 683, Dec. 1958.
- 7. McLanahan, Winifred, and Fleming, Richard: Nursing Outlook, 6: 648, Nov. 1958.
- 8. Gelber, Ida: Released Mental Patients on Tranquilizing Drugs and the Public Health Nurse. New York University Press, New York, 1959.
- 9. NLN.: The Correspondent, 1: Fall 1958; 2: Winter, Spring, Summer 1959.

- 10. Gurel, Lee, and Morgan, M. M.: Nursing Outlook, 6: 590, Oct. 1958.
- 11. Gurel, Lee, and Morgan, M. M.: Nursing Outlook, 6: 619, Nov. 1958.
- 12. NLN.: Suggestions for Experimentation in the Education of Psychiatric Aides. NLN Mental Health and Psychiatric Nursing Advisory Service, 1959.
- 13. Morgan, Tirzah M., and Gibson, Winifred: Mental Hospitals, 10: 18, Feb. 1959.
- 14. Herzog, Ruth M.: Nursing Outlook, 6: 622, Nov. 1958.
- 15. Marshall, Margaret A.: Nursing World, 133: 30, Aug. 1959.
- Fernandez, Theresa: Am. J. Nursing,
   658, May 1959.

- 17. Balkman, Nell T.: Mental Hospitals, 10:7, June 1959.
- 18. Farrar, Clarence B.: Nursing Outlook, 7: 286, May 1959.
- 19. Adams, Hugh, and Hedman, Lorraine: Mental Hospitals, 10: 7, Jan. 1959.
- 20. Marchesini, Erika : Am. J. Nursing, **59** : 978, July 1959.
- 21. Martinez, Ruth E.: Am. J. Nursing, 58: 1681, Dec. 1958.
- 22. Peplau, Hildegard: The Clinical Specialist in Psychiatric Nursing. (Unpublished report) 1958.
- 23. Kranock, Ann, Siegel, Edward, and Mabry, John H.: Nursing Research, 8: 172, Summer 1959.

# FAMILY CARE AND OUTPATIENT PSYCHIATRY

# WALTER E. BARTON, M.D.<sup>1</sup>

#### FAMILY CARE

Family Care continues to show a steady growth (Table 1) in the United States.

#### TABLE I

PATIENTS IN FAMILY CARE IN THE UNITED STATES AS OF JUNE 30, 1959

	All	Mentally Ill
	Patients	Only
New York	2,747	1,834
California	1,416	939
Michigan	1,155	810
Pennsylvania	1,031	
Illinois	1,044	809
Ohio	965	490
Veterans Administration	910*	910
New Jersey	490	462
Maryland	489	392
Rhode Island	262	
Massachusetts	221	18 <b>4</b>
Connecticut	55x	
Virginia	13	8
Florida	12	12
Idaho	6	4
	10.816	6.854
	-	,

1958 9,313 1951 4,937

\* As of December 31, 1958

x As of June 30, 1958

Two new states appear on the list for the first time, (N. J. and Idaho.) New Jersey

has one of the larger programs and has been making placements for 8 years. As in most states, more rapid program development could occur if trained social workers and financial support for expansion were available. Idaho is sponsoring a demonstration of the use of family care in an area with limited mental health resources. Selection and placement of patients is from those believed most likely to become self supporting.

Ullmann(1) studied 191 family care placements and found that 2/3 of the patients so treated continued to live outside of the hospital well over a year after placement. The number of years spent in the hospital, the type of ward and the number of previous admissions were factors significantly related to outcome.

Sixteen family care workers (2) were able to predict the probable outcome of 64 family care placements from abstracts prepared by social workers. Another study (3) compared a family care group of 45 patients with 57 patients released to the community through trial visit procedure.

Even though the family care group seemed to have a lower potential for living outside the hospital, they remained out of the hospital in the same proportion as did those released on trial visit status. The

<sup>&</sup>lt;sup>1</sup> Superintendenc, Boston State Hospital, Boston, Mass.

attributes of a good family care home were investigated (6). The most significant finding was the favorable influence of a male in the home. Not only is the good caretaker a good mother but it is a better home for patients when there is a "good father," or "benevolent parental figures."

Cummings(4) says the placement of patients on trial visit in foster homes is an intermediary or last step for patients who are considered able to live outside the hospital but are not adequate or ready for complete independence.

Kirkpatrick(7) indicates with the present focus on an "open door policy," family care is another valuable step in giving patients an opportunity to find greater self direction.

North Carolina(8) has moved 900 former mental patients from institutions to join 5,000 elderly who live in 352 private boarding homes. The Austin (Texas) State Hospital(9), also attempted to reduce overcrowding among its patients 60 years and older by placing 806 patients in nursing homes, supervised by a hospital clinic team that spends a half day a week in the field.

### OUTPATIENT PSYCHIATRY

The year's most exciting development in outpatient psychiatry has been the report of the Worthing Experiment from England (1, 2, 3). Admissions to mental hospitals increased markedly and serious overcrowding resulted in England as it has in the United States. The Graylingwell Hospital in Chichester developed its Experiment in Worthing, a city of 160,000 people located 22 miles distant from the hospital. The Worthing psychiatric service consists of an outpatient department in the general hospital and three units in another building located in a residential area. These units are a day hospital, and outpatient treatment service, and a home visiting service. Over 1/3 of all initial contacts with patients were made in the home. At the end of 2 years, 71% of the Graylingwell Hospital's admission district was included in the experimental population.

Admissions from the Worthing area dropped by 61.7% and the drop from the total admission district was 43.5%. Ad-

missions among the elderly fell by 51% and there was a reduction of patients in hospital residence of about 10%.

The senior psychiatric staff of the Mapperly Mental Hospital (Nottingnam, England) spend over half their time in outpatient work(4). The integration of these clinics with the local health authority was achieved by pooling staff personnel. A feature of this outstanding and comprehensive community mental health service is a joint pre-admission visit paid to the home of a patient by the psychiatrist and a social worker. Such visits are made routinely in all patients appealing for help who are 65 years of age.

Mandelbrote (5) emphasizes the need for "education of the community towarc recognition and tolerance of mental illness, and the early réferral of psychiatric problems through the proper training of general practitioners and health visitors." Of 288 patients visited in their homes, 50% required hospital admission.

Boaro (6) describes the division of the city of Amsterdam (900,000 pop.) into 6 regions serviced by 12 psychiatrists and 25 nurse-social workers to give community psychiatric service 24 hours a day. Two hundred and fifty inquiries are answered daily and care is provided for 3,000 patients living in the community. Helsinki (7), also provides home visiting services after O. P. D. treatment. Regional health units with outpatient clinics, day and night hospital, family care and sheltered workshops, have been established in Nigeria and in South Africa (8).

A psychiatric emergency service (9) operating 24 hours a day with no waiting for help, gave service to 1,816 new patients in 6 months in the Bronx, N. Y. Only 10% were sent to longterm psychotherapy. Immediate consultation was available for social agencies.

Simultaneous treatment (10), of 20 schizophrenic patients and the members of their families as outpatients proved successful in 80% of the cases. When family members did not appear, the patient's condition deteriorated and often necessitated hospitalization.

Psychiatric outpatient clinics are not possible in thinly populated areas. As a

consequence of distance, the further a patient lives from a treatment facility, the more disturbed he has to be before he gets help. Smith and Witson(11) attempted to meet this problem by training general practitioners to use their offices as outpatient clinics. Fourteen days of planned instruction in a year made this possible.

Brief psychotherapy may be the treatment of choice in an outpatient clinic, rather than an expedient, when criteria for selection of cases are carefully applied, according to Visher (12).

A study of the fate of psychiatric clinic patients (13) points up the failure of many patients to accept psychotherapy when it is made available and the relatively poor results of psychotherapy in patients who do accept it. The Phipps Clinic saw 3,413 new outpatients and referred 17% to individual psychotherapy and 10% to group psychotherapy. Thirty-five percent failed to accept it when available. Three of every 4 patients who began psychotherapy stopped coming without discussing this step. Maximum benefit was obtained by only 9% of those referred for psychotherapy.

The planned flow of patients with psychiatric illness through community resources is advocated by Greving(14) to reduce the need for mental hospital care and to conserve scarce professional service. Outpatient clinics should, in this view, accept only the more seriously ill who are harmful to self, family or community. Expanded counselling service may then handle minor problems that form a large proportion of clinic admissions.

#### **BIBLIOGRAPHY**

### FAMILY CARE

1. Ullmann, Leonard P., and Berkman, Virginia C.: Social Work. April 1959, pp. 72-78.

2. Ullmann, Leonard P., and Berkman, Virginia C.: J. Clin. Psychol., 15: 28, Jan. 1959.

3. Giovanni, Jeanne M., and Ullmann, Leonard.

I. A Comparison of Home Care and Other Trail Visit Fatients.

II. Characteristics of Family Care Homes and Their Relative Merit. Research Reports of V. A. Hosp., Palo Alto, California. #3, July and 4 Aug. 1958.

4. Personal Communications from:

Kirkpatrick, Mrs. Mable, Director, Social Services, Dept. of Mental Hygiene, Albany, N. Y. Wagg, Charles F., Director, Dept. of Mental Health, Lansing, Mich.

Wilsnack, William H., Asst. Chief of Social Service, Dept. of Mental Hygiene, Sacramen-

to, Calif.

Calloway, Mrs. Annette, Chief of Social Service, Dept. of Public Welfare, Chicago, Illinois. Anderson, R. C., Acting Commissioner, Div. of Mental Hygiene, Columbus, Ohio.

Miller, William, Psychiatric Social Work Coordinator, Dept. of Public Welfare, Harrisburg, Pa

Cumming, Roger, Director, Social Work Services, Veterans Administration, Washington, D. C.

DeWitt, Henrietta B., Director of Social Service, Dept. of Mental Hygiene, Baltimore, Maryland.

Regan, John F., Supt., State Hospital, Howard, R. I.

Pugh, Thomas F., Director, Division of Medical Statistics, Department of Mental Health, Boston, Mass. Englebrecht, Mrs. Eleanor, Psychiatric Social Work Consultant, Dept. of Institutions and Agencies, Trenton, N. J.

Davis, Hiram W., Commissioner, Dept. of Mental Hygiene and Hospitals, Richmond, Va. Williamson, Mrs. Virginia S., Director of Social Services, Florida State Hospital, Chattahoochee.

Boyd, Carl, Family Care Project Social Worker, State Hospital, North Orofino, Idaho.

Bloomberg, Wilfred, Commissioner, Dept. of Mental Health, Hartford, Conn.

Winston, Ellen, Commissioner, State Board of Public Welfare, Raleigh, N. C.

5. Hickey, Margaret: The Ladies' Home Journal, Oct. 1958.

6. Middleton, John: Mental Hospitals, 10: 17, Jan. 1959.

#### OUTPATIENT PSYCHIATRY

- 1. Carse, Joshua, Pontan, Nydia E., and Watt, Alexander: Lancet, Jan. 4, 1958, pp. 38-41.
- 2. Carse, Joshua: Report of the first two years of the Worthing and District Mental Health Service Pamphlet. Graylingwell Hospital, Chichester, England, Jan. 1959.
- 3. Watt, A.: Medical World (London), 90: 257, March 1959.
- 4. Macmillan, Duncan: Int. J. of Social Psych., 4: 5, Summer 1958.
- 5. Mandelbrote, Bertram: Ment. Hyg., 43: 368, 377, July 1959.
- 6. Boaro, Conrad: Mental Hospitals, 10: 18, May 1959.

- 7. Stengardsjukh, Ekblom: Nord. Psyck. Medlemsbl., 11: 199-208. Excerpta Medica Vol. 12, #2, Sec. 8, Feb. 1959.
- 8. Moross, H.: Ment. Hyg., 48: 296, April 1959.
- 9. Coleman, M. Donald, and Zwerling, Israel: Am. J. Psychiat., 115: 980, May 1959.
  - 10. Zurick, Kaila K.: Acta Psychother. Excerpto Medica., 11: 9, Sec. 8, Sept. 1958.
- 11. Smith, Jackson A., and Ceci. Witson: Am. J. Psychiat., 115: 539, Dec. 1558.
- 12. Visher, John S.: Am. J. Psychother., 13: 331, April 1959.
- 13. Rosenthal, David, and Jerome D. Frank: J. Nerv. and Ment. Dis., 27: 330, Oct. 1958.
- 14. Greving, Frank T.: Ment. Hyg, 42: 570-577, Oct. 1958.

### FORENSIC PSYCHIATRY

### WINFRED OVERHOLSER, M.D.<sup>1</sup>

Once again, the periodical literature on forensic psychiatry seems to lay emphasis on the criminal aspects of the law. Watson (1) gives an extended study of the aftermath of the Durham case and some of the subsequent decisions of the District of Columbia Court of Appeals amplifying and clarifying the "product" test of criminal responsibility. He concludes that psychiatrists have failed to use the new rule for its intended purpose, namely to explain the way in which mental illness caused the defendant to commit the act alleged. An unsigned note in the Colorado Law Review(2) considers the Durham Rule a decided improvement, and comments that it proves that the prevailing "tests" can be modified and broadened "without disastrous consequences." Lord Keith(3) makes some observations on the Scottish doctrine of diminished responsibility, recently adopted in the English Homicide Act. He states that under this doctrine the status of the psychopath is not clear, and he speaks of Denmark, Sweden, and Netherlands as having a more scientific approach to that problem. An article by Manson(4) takes up the recently enunciated military principle of lack of mental capacity to intend as distinguished from mental irresponsibility as defined in the Manual of Courts Martial. Apparently, he says, the courts are interested in the evidence, not in the nomenclature of mental disorder, and he warns against codifying medical beliefs into law.

Gibbens, Pond, and Stafford-Clark(5) report a followup (1948-1957) of 72 criminal psychopaths, comparing them with 59

<sup>1</sup> St. Elizabeths Hospital, Washington, D. C.

controls. Only 18 of 105 subsections victions were for aggressive crimes. They give as their opinion that the diagnos s does not portend so hopeless a prognosi; as is generally implied. Kozol(6) discusses the psychopath before the law. The new Massachusetts commitment law recognizes character disorder as a ground for commitment to a mental hospital. Mental illness should not be considered as synonymous only with psychosis, Kozol says. Harder(7) reviews 860 defendants examined at the Rheinau hospital in Switzerland . 43% were diagnosed as psychopathic personality with or without mental defect, whereas only 6.4% were considered schizophrenic! Of the group 20% were considered r∋sponsible, 8% not responsible, and 71% of dim nished responsibility. Tuchler(8) discusses psychiatry and criminalistics. He emphasizes the need of each discipline to translate scientific data into everyday language.

In the field of testimony, Davidson(9) deals with testimonial capacity. There is no single test for measuring it he says; the psychiatrist's clinical judgment is still the best instrument. Orenstein 10, in a symposium on forensic medicine, discusses the credibility of the witness. He points out that although the psychiatrist can be helpful in establishing credibility, his services are limited on account of legal procedure. Freedman(11) deals with pharmacodynamics and psychiatric investigation. He. remarks that "truth serums" stimulate the unrepressed expression not only of lact but of fancy and suggestion as well, so that they are actually not "truth serums" at all. Guttmacher (12) discusses psychiatric court

clinics, advocating more accent on therapy rather than limiting their function to diagnosis and disposition. Everett and Suitt(13) treat the evolution of bench consultation. The expert, they say, must have some knowledge of the germane legal issues, and of the relevance of the psychiatric evidence to the legal problems involved. Kreutzer (14) makes a thorough analysis of the Briggs Law of Massachusetts. He concludes that it is a fundamental part of the administration of criminal justice in that State. Donnelly, Edgren, Satter and Ryan (15) present the results of a joint social-psychiatric-legal counselling service set up in Hartford on an experimental basis two years ago. Stern (16) presents a scholarly essay on the problem of privilege. He expresses the hope that eventually privilege may rest on a sound principle as a sole criterion, namely possible harm to the patient.

Usdin(17) discusses testamentary capacity, reviewing the psychiatric problems involved. He notes that as yet there is no place for legal recognition of the impact of the unconscious on human behavior in this field.

Ross (18) presents another in his series of studies on the commitment of the mentally ill, this time on problems of law and policy. Most of the statutes are not in general policy agreement, and apparently some basic questions have not even been considered. His article includes a state-by-state synopsis of laws on such topics as notice hearing, jury trial, and justification for commitment. Davidson(19), in a chapter of the American Handbook of Psychiatry, deals with the commitment procedures and their legal implications. Another lengthy article, this time by student editors (Brucken, Genger, Rice, Shaevsky, Slye and Volpe)(20) deals with mental illness and contracts. The authors conclude that the tests for inability to contract have been basically the same for centuries, uninfluenced by advances in psychiatry.

In a more general field, Overholser(21) deals with major principles of forensic psychiatry.

In a symposium on criminal justice, Roche (22) discusses criminal responsibility and mental disease. He advocates the Durham rule as providing the largest range to the

psychiatrist in being of use to the court. An unsigned note in the Yale Law Journal (23) considers the release of defendants who have been committed to a mental hospital following acquittal by reason of insanity. The note recommends a board of psychiatrists, lawyers and members of the community at large to pass on such releases. Goodman (24) discusses legal inertia as exemplified in the "almost contemptuous disregard" with which several courts have cast aside suggestions that the Durham rule should be adopted. Diamond (25) in a thoughtful editorial deals with the "fallacy" of the impartial expert.

Most of the state legislatures met this year. In the spate of legislation, very few laws relative to mental health seem to have been passed. Iowa(26) modernized the terminology of mental health, substituting, for example, "mentally ill" for "insane." New York(27) authorized its directors of State hospitals to establish sheltered workshops on the grounds of the hospitals. Several more States have adopted the interstate compact, among them Missouri, North Carolina, South Carolina and Vermont.

#### BIBLIOGRAPHY

- 1. Watson, A. S.: Am. J. Psychiat., 116: 289, Oct. 1959.
- 2. Colorado Law Rev., **58**: 1253, Dec. 1958.
- 3. Keith, Lord: Medico-Legal J., 27: 4, Part 1, 1959.
- 4. Manson, P. C.: Mil. Law Rev., 4: 79, April 1959.
- <sup>1</sup>5. Gibbens, T. C. N., Pond, D. A., and Stafford Clark, D.: J. Ment. Sci., 105: 108, Jan. 1959.
- 6. Kozol, H.: New Eng. J. Med., 260: 637, March 26, 1959.
- 7. Harder, A.: Schweiz. Arch. f. Neurol. u. Psychiatrie, 83: 237, 1959.
- 8. Tuchler, M. I.: J. Forensic Sci., 4: 242, Apr. 1959.
- 9. Davidson, H. A.: Boston Univ. Law Rev., 39: 172, Spring 1959.
- 10. Orenstein, L. L.: Int. Rec. of Med., 172: 623, Oct. 1959.
  - 11. Freedman, L. Z.: Ibid., 617-622.
  - 12. Guttmacher, M.: Ibid., 612-616.
- 13. Everett, R., and Suitt, R. B.: J. Forensic Sci., 4: 97, Jan. 1959.
- 14. Kreutzer, R. H.: Boston U. Law Rev., 39: 188, Spring 1959.
  - 15. Donnelly, J., Edgren, C. G., Satter, R.,

and Ryan, M. P.: Am. J. Psychiat., 115: 1021, May 1959.

16. Stern, H. R., Jr.: Ibid., 1071, June 1959.

17. Usdin, G. L.: Int. Rec. of Med., 172: 629, Oct. 1959.

18. Ross, H. A.: Mich. Law Rev., 57: 945, May 1959.

19. Davidson, H. A.: Am. Handbook of Psych., ed. S. Arieti. N. Y. 1959: Basic Books. ch. 96, pp. 1903-1922

20. Mich. Law Rev., 57: 1021, May 1959.

21. Overholser, W.: Am. Handbook of Psychiatry, supra. ch. 95. pp. 1887-1901.

22. Roche, P. Q.: Tenn. Law Rev., 26: 222, Winter 1959.

23. Yale Law J., 68: 293, Dec. 1958.

24. Goodman, R. A.: Western Reserve Law Rev., 10: 597, Sept. 1959.

25. Diamond, B. L.: Arch. Crim. Psychodynamics, 3: 221, Spring 1959.

26. House File 701, 1959.

27, 1959 Session Laws, ch. 394.

### ADMINISTRATIVE PSYCHIATRY

## J. MARTIN MYERS, M.D., AND LAUREN H. SMITH, M.D.1 •

Psychiatrists, physicians, and the general public continue to press for greater diversification of psychiatric facilities to provide a type of longitudinal patient care having a flexibility and selectivity little known a few years ago. The existence of large state hospitals isolated from the rest of the medical and social community can only be viewed as a poor answer to any psychiatric problem other than for domiciliary care of persons rejected by society and medicine. Indeed they are obsolescent (16). The development of comprehensive psychiatric community services may be based on the mental hospital and involve the setting up of outpatient clinics, day and night centers. Mandelbrote has pointed out the importance of educating the community towards recognition and tolerance of mental illness and of training the family doctors and public health officers in order to facilitate early referral and continuity of treatment (32).

The psychiatric hospital of the future is pictured as the headquarters and training and research center for the local mental health organization with only a small residential unit for special treatment. As many patients as possible would be treated in outpatient clinics or wards of a general hospital. The mentally disordered criminal should be treated in a separate unit (38). The younger long-term care patients, of whom the great bulk will be schizophrenic, will live in groups and to a large extent look after themselves (9). In New York

State, certain statistical trends which show a marked increase in geriatric psychiatry, a marked increase in child psychiatry, plus a change in the composition of the population in the institutions as turnover of patients increases, produce a net tendency to an increase of dependency and handicap in the residual hospital population; Brill and Patton conclude this will mean fewer working patients and the need of more skilled and more efficient paid employees (5).

The Health Minister of Ontario would segregate "hopelessly ill" mental patients and develop diagnostic and treatment centers in larger cities with sufficient staff to carry on outpatient, day care, night care, and short term inpatient treatment; his mental hospitals would be units of 250 to 300 beds with a staff particularly oriented to research in schizophrenia (13). The South African National Council for Mental Health has developed a provisional plan for comprehensive community care (33). Programs have been described as they have developed in New York State(14), Minnesota(22), Eastern Kentucky(21), and Philadelphia (28). For those considering establishing a mental health unit, Hamovitch details the history of the formation of one noting certain principles in its establishment(18).

The usefulness of having psychiatrists on call twenty-four hours a day is a well known advantage of Querido's integrated Amsterdam plan(2). The Psychiatric Home Treatment Service of the Boston University School of Medicine provides emergency

<sup>&</sup>lt;sup>1</sup>Pennsylvania Hospital, 11 N. 49th St., Philadelphia 39, Pa.

treatment for those who refuse or are unable to get to a hospital or clinic (35). By having a psychiatrist immediately available to see any emergency for brief therapy, less than 10% of the patients need referral for prolonged treatment, and chronic patients could be carried with less expenditure of time (7).

In recent years there has been a tremendous growth in the use of the day hospital; some of the types of setting, facilities, staffing, types of patient, and programs were summarized from the proceedings of the First National Day Hospital Conference(16). Ewen Cameron described briefly how the program at Allen Memorial Hospital has been changed (6). Harrington and Mayer-Gross detail their several years experience at Uffculme Day Hospital and recomend a maximum of 16 patients with no more than a few of them schizophrenics in order to maintain a cohesive therapeutic group (20). A review of the literature, as well as general English attitudes about day hospitals, is presented by Craft(8). They have been found useful in the treatment of severely disturbed schizophrenic children, and greater development of them might decrease the inappropriate placement of a large number of mentally ill children in residential centers (15).

Bennett has reviewed the problems in establishing and maintaing psychiatric units in general hospitals with facts and figures for several(3). Details about the setting up of a small psychiatric inpatient service in a small rural general hospital were given by Adams, who commented on the advantages and disadvantages of such a program(1). The opening of a general hospital's closed ward did not require additional personnel nor modification of treatment and admission policies(24).

A brief overall impression of Soviet psychiatry is given by Lebensohn(27), while another author who visited a 2,220 bed mental hospital in Moscow expressed surprise to find "such fine hospital care" with an employee to patient ratio of one to one and a staff of 167 physicians of whom 105 were psychiatrists(26). British psychiatry was reviewed by several (23, 37): Beresford of the York Retreat adds comments about the contrasting administrative prob-

lems of private and public hospitals, particularly in regard to an open door policy (4); Paterson stated, "... the improvements in therapy have been brought to the ordinary citizen to a far greater extent than would have been possible if it had not been for the National Health Service," and, "It is certainly true that any fears which might have been entertained that socialized medicine might stifle initiative among practitioners working at the periphery have not been realized" (34).

The costs of mental illness, both direct and indirect, with many valuable tables and figures were the subject of two monographs: in the one, *Economics of Mental Illness*, Fein is generally conservative in his estimates (12); in the other, state mental health programs and tax problems faced by legislatures are discussed by Spector (36).

Statistics concerning the number, distribution, and activities of psychiatrists show that although the number of psychiatrists has increased in three years 21.2%, they are still grossly unevenly distributed. Over half have psychiatric hospital affiliation and two-thirds are in private practice(11).

Malzberg reported his study of first admissions in New York State for psychoneuroses (30), discussed the difference in rates for all first admissions of Negroes (29), and summarized many of his important statistical studies (31). In Norway the incidence of mental disease was found to be higher among refugees than among matched settled average population(10). Results supporting the finding that schizophrenic admissions are higher from low socio-economic areas and manic-depressive from high were reported, but the investigators expressed doubts that such results establish the social variables as contributory (19). A Canadian study concluded that differences in admission rates between provinces are less indicative of the incidence of mental disorders than of such factors as social judgment regarding what constitutes mental abnormality, social demand for hospital care, availability of care, and variations in diagnostic criteria (17).

### BIBLIOGRAPHY

1. Adams, H.: Ment. Hyg., 43: 508, Oct. 1959.

- 2. Baars, C. W.: Ment. Hosp., 10: 18, May 1959.
- 3. Bennett, A. E.: Am. J. Psych., 115: 974, May 1959.
- 4. Beresford, C.: Psych. Quart., 33: 233, April 1959.
- 5. Brill, H., and Patton, R.: Bull. N. Y. Acad. Med., 34: 786, Dec. 1958.
- 6. Cameron, D. E.: Ment. Hosp., 10: 16, May 1959.
- 7. Coleman, M. D., and Zwerling, I.: Am. J. Psych., 115: 980, May 1959.
- 8. Craft, M.: Am. J. Psych., 116: 251, Sept. 1959.
- 9. Duval, A. M.: Ment. Health Virginia, 8: 5, 1958.
- 10. Eitinger, L. J.: Ment. Sci., 105: 326, April 1959.
- 11. Fact Sheet #10, APA and NAMH Joint Inf. Service, Aug. 1959.
- 12. Fein, R.: Economics of Mental Illness. N. Y.: Basic Books, 1958.
- 13. Foreign Letters: J.A.M.A., 170: 349, May 1959.
- 14. Forstenzer, H. M., and Hunt, R. C.: Psychiat. Quart., 32: Suppl. pt. 1 41, 1958.
- 15. Freedman, A. M.: Am. J. Psych., 115: 893, April 1959.
- 16. Goshen, C. E.: Am. J. Psych., 115: 808, March 1959.
- 17. Gregory, I.: Can. Psych. Assoc. J., 4: 51, Jan. 1959.
- 18. Hamovitch, M. B, and others: Ment. Hyg., 43: 412, July 1959.
- 19. Hardt, R. H.: Psychiat. Quart., 33: 126, Jan. 1959.
  - 20. Harrington, J. A., and Mayer-Cross, W.

- J.: Ment. Sci., 105: 224, Jan. 1959.
- 21. Hayes, R. H.: Ment. Hosp., 10: 9, April 1959
- 22. Hodges, A., and Cameron, D.: Ment. Hyg., 43: 111, Jan. 1959.
- 23. Hordern, A.: Psychiat. Quart., 32: 342, April 1958.
- 24. Kim, K., and Eaton, M. T.: Am. J. Psychiat., 116: 74, July 1959.
- 25. Kirkpatrick, W. L.: Ment. Hosp., 10: 16, April 1959.
- 26. Klein, R. H.: Ment. Hosp., 9: 19. Dec. 1958.
- 27. Lebensohn, Z. M.: Arch. of N & P, 80: 735, Dec. 1958.
- 28. Linden, M. E., Appel, K. E., Davis, J. E., Matthews, R. A.: Am. J. Psych., 116: 344, Oct. 1959.
- 29. Malzberg, B.: Ment. Hyg., 43: 422, July 1959.
- 30. Malzberg, B.: Am. J. Psych., 116: 152, Aug. 1959.
- 31. Malzberg, B.: Am. Handb. of Psych., I: 161. N. Y.: Basic Books, 1959.
- 32. Mandelbrote, B.: Ment. Hyg., 43: 368, July 1959.
- 33. Moross, H.: Ment. Hyg., 43: 296, April 1959.
- 34. Paterson, A. S.: Am. J. Psych. 116: 244, Sept. 1959.
  - 35. Scope Weekly, 4: 1, April 15, 1959.
- 36. Spector, S.: APA Ment. Hosp. Service, March 1959.
- 37. Taylor, F. K.: B. J. Med. Psychol., 31: 153, 1958.
- 38. World Federation Mental Health, Quart. J., 11: 48, Feb. 1959.

### MILITARY PSYCHIATRY

# JOSEPH S. SKOBBA, M.D.1

Since the exploration of outer space is a military activity, the psychological aspects of space travel on personnel have become the subject matter of study by military psychiatrists.

Ruff and Levy(1) described experiments to study the stresses which might be expected to occur in space flight. They state that the current knowledge of stress in space flight is based largely on inference from the study of analogous experiences. From the study of these data, they believe

<sup>1</sup> 132 Doctors Bldg., North Unit, 490 Peachtree St., N. E., Atlanta 8, Ga.

that it can be predicted that space flight will impose no psychological stress which carefully selected, trained crews cannot withstand. In the laboratory two types of experiment have been employed: one, a study of prolonged confinement during which an interesting effect—that of regressive behavior—was observed; the second group of experiments was devised to determine what kinds of stimuli, supplies, and structuring were necessary for effective functioning. Their findings indicate that at least 7 groups of variables must be considered in planning isolation experiment

research. These variables are as follows:

1. The complex of circumstances under which isolation occurs;

2. The subject's personality, background, motivation and set;

3. "Alcneness"—this included both geographic and cultural components;

4. Degree of communication allowed between subject and experimenter;

5. Confinement;

6. Perceptual space;

7. Modality, quantity, and pattern of sensory input.

These authors conclude that experimental isolation is stressful by destructuring the environment. It becomes intolerable if lack of meaningful inputs disrupts perception of continuity and sameness. Structure is maintained primarily through the sense of ego identity, and secondarily by preserving orientation.

Kinsey(2) reported on the psychologic aspects of the Transpolar Cruise of the Nautilus. It was noted that favorable environmental factors, not only those vital to safety but also those unnecessary but desirable facilities that make life on a submarine more pleasant, enhanced the maintenance of high morale and motivation. He observed a need for meaningful goals both major and local or personal and the benefits derived from their accomplishment. It was noted that group interaction in many respects paralleled an interrelationship observed in many families. The obvious interest of higher echelons in the men's welfare accounted for a major increment of morale. An important implication was that cool, level-headed leadership of an emotionally mature commanding officer must be available to maintain a neutral and supportive

Cooke(3) considers the stockade an integral part of the military structure and its purpose as only incidentally custodial. He is of the opinion that its goal is not only punishment of misconduct but an indication of the attitude of the military society toward the act, not the person. It serves as a deterrent to future violations by the individual and the rest of the military population. It is intended to make the individual a better soldier. As the result of a study of prisoners leaving the stockade, he determined the feasibility of establishing a screening program by which non-effective prisoners could be identified. The rehabilitation program

consisted of a series of steps, as follows:

Intake interview, initial classification; Adjustment interview; Confinement officer interview; Parole period; Interview prior to release; Interview with commanding officer.

::

With well trained, intelligent, well-motivated social work specialists and close professional supervision, the program proved successful with only minimal demand on the time of the psychiatric staff of the full time activity. The program provided an aid to rehabilitation which was voluntary and based on increasing responsibility, military training, and increased personal benefits. The soldier was provided with a choice because his offense was more often based on immaturity than on antisocial or criminal behavior. This program led to a successful reintegration of the soldier into his duty role as a responsible, effective soldier.

The author observed a similar plan in operation. The interview with the commanding officer was especially helpful to the morale of the prisoners. A sharp decline in recidivism was one of the results.

Pierce(4) epitomizes common psychiatric problems in recruits in a brig. He recommends the use of group testing of prisoners, and finding methods to reduce delay in the trial. He recommends correlation of brig research data by all of the Armed Forces and suggests that this would result in economic and moral benefits to the Armed Forces.

Wood(5) considers the issue of returning psychiatric patients to duty. In his opinion this matter brings into sharp focus numerous important problems for the military psychiatrist. For example: his own feelings of security, his adjustment to military life, his ability to evaluate a new kind of patient in a highly specific life situation, his concepts of good treatment, and his ability to prognosticate. He finds that when psychiatrists enter military service, they all share an abrupt total unawareness of the special requirements for the role of the military psychiatrist. By the time that they feel comfortable with their duties, they are on their way to civilian life again. In his article, Wood deals with specific problems of returning a patient to active duty. Generally 1960]

the most important element that determines a patient's willingness to return to duty is his relationship with his psychiatrist. Authority conflict manifests itself in a variety of reactions and can be dealt with to advantage in short-term psychotherapy. He stresses the importance of concentrated learning efforts on the part of the prisoner.

Adler(6) reviews the literature on enuresis and reports a double blind study with Equanil. He found that enuresis is influenced by almost as many factors as there are investigating specialists in the field. He lists the following groups of causes:

- 1. Psychologic—resulting from internal conflict;
- 2. Psychologic—resulting from a failure in training;
- 3. Organic—due to disturbance in the genito-urinary system;
- 4. Organic—due to disturbances in the nervous system.

He studied 102 male recruits, ranging from 17 to 20 years of age. They were divided into three groups. One group consisting of 50 individuals was used to test factors of motivation, personality and treatment on disposition. A second group of 52 individuals was used to test the effectiveness of treatment alone on disposition. The third group consisted of 36 individuals on whom was tested the effectiveness of continuity on disposition. The subjects were exposed to a double-blind study involving Equanil and a placebo with supportive and suggestive psychotherapy. The remission rate for each group was 43%. Equanil selectively benefited aggressive enuretics. Motivation for service does not significantly affect the results of treatment. With passive enuretics there was no difference in response to Equanil or the placebc. Of the transient enuretics, 85% recovered with psychotherapy.

Flinn, et al.(7) describe 22 cases of what they term Travel Syndroms. These were acute transitory psychoses occurring in military personnel during travel. Typi-. cally the onset occurred after several days of travel. The patients consumed more alcohol than usual, were fatigued, practised irregular eating habits, and were under emotional stress. The most prominent symptoms were apprehension, hallucinations, ideas of reference and paranoid delusions. The symptoms subsided quickly following hospitalization. In four of the patients there was no alcoholic indulgence but the psychological stress of the travel precipitated latent psychotic reactions where there was pre-existing emotional disorder.

The Current List of Medical Literature for 1959 listed one foreign reference (8).

#### BIBLIOGRAPHY

- 1. Ruff, George E., and Levy, Edwin Z.: USAF: Am. J. Psych., 115: 793, Mar. 1959.
- 2. Kinsey, Jack L.: USAF Mec. J., 10: 451, Apr. 1959.
- 3. Cooke, Edwin T.: USAF Med. J., 10:553, May 1959.
- 4. Pierce, Chester M.: Mil. M∋d., 124: 131, Feb. 1959.
- 5. Wood, Edwin C.: USNR Mil. Med., 124: 210, Mar. 1959.
- 6. Adler, Herbert M.: USAF Med. J., 10: 767, July 1959.
- 7. Flinn, Don E., Gaarder, Kenneth R., and Smith, Dasil: USAF Med. J., 10: 524, May 1959.
- 8. Kapor, J.: Psychology and Psychiatry with Special Attention to Military Aviation. Vojno Sanitetski Pregled (Beograd), 15: 297, Apr. 1953.

# **PSYCHIATRIC EDUCATION**

### FRANKLIN G. EBAUGH, M.D., AND ROBERT H. BARNES, M.D.

Regretfully we start this review by noting our great personal sorrow at the death of Dr. Seymour Vestermark, who as Chief of the Training and Standards Branch of the National Institute of Mental Health had done so much to fashion the course of psychiatric education, both resident and undergraduate.

Again one of the basic concerns in psychiatric education review is the per-

<sup>&</sup>lt;sup>1</sup> 1801 High St., Denver 18, Col.

<sup>&</sup>lt;sup>2</sup> Kansas City, Mo.

sonnel shortages so constantly with us. The Joint Commission on Mental Illness and Health has just published their third book which covers this general area. Dr. Albee (1) carefully documents the tremendous shortage of professional people and suggests a rather hopeless picture unless some very major scientific breakthroughs occur or basic changes in social attitudes result in more people going into the sciences, including the behavioral. It is necessary that we as educators create an image of the professional man that will attract the high school graduate into scientific work. Between 1956 and 1959 we did improve the ratio of psychiatrists to the general population from one per 19,200 to one per 16,400(2). However, as Albee(1) notes, the rate of increase in psychiatrists is not going to be sufficient to keep up with our population increases so that this ratio may not be maintained. A further fact of significance is the concentration of psychiatrists in large cities, with 54% of all psychiatrists residing in the 15 largest metropolitan areas, representing only 31% of the total United States population(2).

Another discouraging trend appears to be the decreasing number of medical school applicants in the face of increasing college enrollments and increasing numbers of graduates from colleges (3). Also, there is some evidence suggesting that medical schools are not attracting the same quality of students that they formerly did. In the year 1950-51, 40% of entering medical school students came to medical school with an "A" average. In 1958 this had dropped to only 18% coming with "A" averages. In light of this general picture the Dean of the School of Medicine of the University of Pennsylvania (4) believes it is unlikely that the psychiatric specialty as now constituted can meet the ever-increasing needs. He brings up the possibility of training a large number of "general practitioners of psychiatry" who would be trained through a different medical school curriculum than our current physicians. He feels we are going to have to supply more practitioners of psychiatry within the medical field or face the clinical psychologist, social workers and other non-medical groups taking over more and more of the treatment of the mentally ill.

It is interesting that psychiatrists as a group are quite active in teaching and a recent report indicates that one-third of all psychiatrists hold academic appointments (2). Jurgen Ruesch, however, points out the extent to which our teaching activities have to compete for our time with TV, radio, telephones, as well as invitations for social affairs, scientific gatherings, committee meetings, etc. Rare is the psychiatrist who has an adequate time to teach in face of these demands, added to clinical work and research interests (5).

A Philadelphia group(6) has made a comprehensive survey of 30 psychiatric departments in medical schools in an attempt to discover what might be considered a standard, appropriate and realistic structure for a department of psychiatry in a medical school. It is an excellent study and should be read by all in the field. It makes clear the tremendous range in the quality and type of departments that exist in our medical schools, varying from departments with 17 full time teachers and research grants within the millions to departments with no full time staff or beds and no research funds. The group notes the extent to which department and administrative function may swamp the psychiatric leadership and creativity of the faculty and the impossible expectations that are made on the average department chairman.

### UNDERGRADUATE PSYCHIATRIC TEACHING

How to integrate teaching of human behavior into the medical school curriculum in an understandable and effective manner has been considered by a number of authors. Two psychiatrists in New Orleans (7) believe that teaching human behavior as a basic science in medical schools is best approached by illustrative clinical material well integrated with basic psychological, cultural and neurophysiological data. In an attempt to arrive at a better understanding and teaching of human behavior in health and disease, the new medical school at the University of Kentucky has organized a Department of Behavioral Science(8). Here a health team concept will be developed with the student



learning early the role relationships between different professional groups interested in behavior. Staffing pattern in the unit includes sociologists, cultural anthropologists, experimental and social psychologists. This general approach in medical education is being carried out extensively elsewhere as is summarized in an article from the University of Natal in South Africa where much emphasis is put on a knowledge of sociology, anthropology and psychology in the training of medical students (9). In the Department of Psychiatry at Baylor University College of Medicine a sociologist is used extensively to help the students to understand behavior in terms of "What people do" rather than "What they should do"(10). Cooper(11) has been concerned that psychiatry and psychology are not designed to provide values and goals which can be communicated to medical students and in turn be helpful to them in treating patients, particularly in dealing with some of the deep-seated characterological problems seen so often. He raises the question as to whether the sociologist should take a major role in medical education from the standpoint of helping the medical student to develop clearer concepts of values and goals.

One recent study underlined the importance of the resident in the teaching of medical students (12). The value of joint teaching of medical students by an internist and a psychiatrist over a period of years was published in a study from the University of Pittsburg(13). The two teachers attempted to develop an integrated teaching experience and to give neither a purely psychiatric nor medical image to the patient. Less frequently, then, did the question appear, "Is this psychic or organic?"

One author at the annual APA meeting this year noted the low status which the lecture occupies as a teaching method in psychiatry (14). He outlined several suggestions to increase the effectiveness of the lecture, suggesting such things as copious use of passages from the autobiographic writings of people who have undergone mental illness, and verbatim transcriptions of recorded interviews with. patients to illustrate basic material in a lecture. An interesting attempt to make

psychiatry more comprehensible to the sophomore medical student through a course in psychophysiology was presented by an author from Colorado (15). Actual laboratory work in psychophysiology is undertaken on a limited scale.

Coleman (16) outlines an approach to the teaching of psychotherapy to medical students which he has found helpful in allowing the student to disencumber himself of some of his preconceptions, premeditations and distortions of attitude and behavior, as well as his discomfort in a close, intimate relationship with a patient. At the University of Oklahoma (17) a longitudinal curriculum allows for training in psychotherapy to take place over a considerable period of time. The value of the longitudinal curriculum in this type of training over the usual "block" system in teaching psychotherapy is emphasized.

It is interesting that very few American medical schools offer any teaching of sexual and marital problems to medical students and very little appears in the psychiatric literature through the years on this subject. Recently in Britain a half day symposium on this subject was held which underlined the lack of such training and the need to have it set up as part of the curriculum (18).

#### GRADUATE TRAINING

A review (19) of the latest available figures on graduate psychiatric training in the United States indicates that there are currently 288 residency training programs with a total of 2,770 appointees. Seventyeight percent of available residencies in psychiatry are filled. These figures indicate approximately 260 more residents in training in psychiatry this year than at a comparable time last year. It is interesting that there are almost twice as many residents in training in surgery (5,373) cr internal medicine (4,842) as in psychiatry. There is a very interesting general review article on the development of internships and residencies (20) which indicates that between 1940 and 1958 the number of medical stu-. dents increased only from 21,271 to 29,473, but during this same period the number of residencies available increased almost seven-fold or from 4,882 to 30,595. The extent to which internship and residency pro-



grams are located outside direct university zones of influence is noted and the author ends up with the final comment, "It would appear that the outstanding medical task for the remainder of the Twentieth Century will be to foster centers of medical excellence in strategically located hospitals in all American communities" (20).

The American Board of Psychiatry and Neurlogy and the story of its founding is presented in a lively review(21). We are fortunate to have available the results of a 10-year effort to delineate the factors important in the selection of psychiatric residents, based on the studies at the Menninger School of Psychiatry (22). This book should be in the hands of all psychiatric educators and carefully perused by selection committees. Chapter XVII— "Recommendations"—should be of major importance to other program directors. A much briefer study is made by Eisendorfer (23) of the factors which make for a good psychoanalytic candidate based on the work of the Committee for Admissions in New York Psychoanalytic Institute.

Morse (24) believes that there is a serious and little recognized deficit in post-war residency training which consists of minimal interaction between younger psychiatrists and the rest of the medical profession. As he points out, the young psychiatrist goes to few medical meetings, mixes professionally only with other psychiatrists and does not communicate adequately with the referring physician. He feels that it should be the duty of training programs to underline the importance of proper communication and interaction with nonpsychiatric medical colleagues. A Cornell group (25) underlines the difficulty in interesting residents in the total hospital environment as a therapeutic tool and in teaching them the importance of what goes on outside the therapeutic hour. At the Payne-Whitney Clinic residents in the. third year are designated as floor doctors and are put in charge of the management of a unit.

Those doing supervision work in psychotherapy will be pleased to have Ekstein and Wallerstein's new book from the Menninger Foundation titled, *The Teaching* 

and Learning of Psychotherapy (26). It is a comprehensive review of the process of supervision. Two teachers from the University of Utah(27) note the importance of giving the beginning psychotherapist a feeling of personal security which can often be accomplished by assigning the resident a patient to whom he can relate easily. Oftentimes this must be a patient from his own socio-economic group. The authors underline the value of exposing the trainee to several theoretical approaches to provide perspective. A new book by Glad(28) also expounds the value of several theoretical approaches. His book is aimed toward further developing a science of psychotherapy. This book should provide the supervisor and the teacher many new ideas to broaden the interests, views and skills of the beginning psychotherapist.

• ;

A sizable number of residents continue to come from foreign lands, although interestingly the proportion in psychiatry is less than the over-all average. In psychiatry 19% of our residents in training are graduates of foreign schools, whereas over-all 23% of resident trainees in America are graduates of foreign schools (19). Smiley (29) gives a review of the results of the first year of operation of the Educational Council for Foreign Medical Graduates. In the February 1959 examination in the United States 48% obtained passing scores and 27% obtained borderline scores leading to temporary certification. For those training directors interested in medical education around the world, may we recommend the special international issue of the Journal of Medical Education (30).

A very interesting report of 5 years' experience at Harvard University School of Public Health on the education of mental health specialists appeared (31). This is a post-graduate course of one to three years' duration for psychiatrists, Ph.D.-level psychologists, and senior psychiatric social workers. The course is designed to help the clinician shift from his emphasis on the individual to comprehending community health factors. What is outlined is training in a significant new sub-specialty of psychiatry where there is no generally accepted systematic body of knowledge.



### BIBLIOGRAPHY

- 1. Albee, G.: Mental Health Manpower Trends, Joint Commission on Mental Illness and Health. New York: Basic Books, Inc., 1959.
- 2. Fact Sheet No. 10, Joint Information Service of The American Psychiatric Association and the National Association for Mental Health, Aug. 1959.
  - 3. Datagrams: J. Med. Ed., 34: 681, 1959.
- 4. Mitchell, John McK.: J. Med. Ed., 34: 53, 1959.
  - 5. Ruesch, J.: J. Med. Ed., 34: 571, 1959.
- 6. Appel, K., and Pearson, M.: Am. J. Psychiat., 115: 698, 1959.
- 7. Watkins, C., and Knight, E.: Am. J. Psychiat., 116: 55, 1959.
  - 8. Straus, R.: J. Med. Ed., 34: 662, 1959.
  - 9. Chesler, J.: J. Med. Ed., 34: 675, 1959.
  - 10. Bloom, S.: J. Med. Ed., 34: 667, 1959.
  - 11. Cooper, J.: J.A.M.A., 170: 453, 1959.
  - 12. Dedmon, R.: J.A.M.A., 169: 329, 1959.
- 13. Earley, L., and Gregg, L.: J. Med. Ed., **34**: 927, 1959.
- 14. Nemiah, J.: The Lecture: A Reconsideration, a paper delivered to the Annual Meeting of the APA, Philadelphia, Pa., 1959.
- 15. Margolin, S.: Psychophysiology: A Pre-Clinical Phase in the Teaching of Clinical Psychiatry, a paper delivered to the Annual Meeting of the APA, Philadelphia, Pa., 1959.
- 16. Coleman, J.: An Approach to the Teaching of Psychotherapy, a paper delivered to the

Annual Meeting of the APA, Philade phia, Pa., 1959.

17. Lester, B., et al.: Teaching Psychotherapy in a Longitudinal Curriculum, a paper presented at the Annual Meeting of the APA Philadelphia, Pa., 1959.

18. The Teaching of Sexual and Marital Relations to Medical Students: Brit. Med. Stu-

dents Assoc. Journal, p. 47, 1959.

19. J.A.M.A., 171: 670, 1959.

20. Curran, J.: J. Med. Ed., 34: 373, 1959.

21. Freeman, W., Ebaugh, F., and Boyd, D.: Am. J. Psychiat., 115: 769, 1959.

22. Holt, R., and Luborsky, L.: Personality Patterns of Psychiatrists. New York: Basic Books, Inc., 1958.

23. Eisendorfer, A.: Psychoanal. Quart., **28**: 374, 1959.

24. Morse, R.: Am. J. Psychiat., 115: 899,

25. Masterson, J., and Regan, P.: Psychiatry, **22**: 51, 1959.

26. Ekstein, R., and Wallerstein R.: The Teaching and Learning of Psychotherapy. New York: Basic Books, Inc., 1958.

27. Branch, C., and Ely, J.: A.n. J. Psychiat., 115: 887, 1959.

28. Glad, D.: Operational Values in Psychotherapy. New York: Oxford University Press, 1959.

29. Smiley, D.: J.A.M.A., 170: 534, 1959.

30. Special International Issue J. Med. Ed., 34: 8, Aug. 1959.

31. Caplan, G.: Ment. Hygiene. 43: 268, 1959.

# REHABILITATION AND OCCUPATIONAL THERAPY

### FRANKLIN S. DuBOIS, M.D.<sup>1</sup>

A year ago in this review the contributions of British investigators to psychiatric rehabilitation were emphasized and the prediction was made that the changing pattern of psychiatric thought and practice in the United Kingdom would influence psychiatric methods elsewhere(1). Events of the past year sustain this prediction and indicate that American psychiatry is following the British orientation toward the open hospital and the expansion of community psychiatric services. The Milbank Memorial Fund has contributed generously to this movement by supporting visits to

selected British hospitals by state hospital authorities of New York, New Jersey and Connecticut(2) and by making possible a study of the open mental hospital by Hunt (3). From his survey Hunt concludes that ithe great fundamental value of the opendoor movement lies in its demonstration that the mentally ill not ought to be, but can be, destigmatized."

In this country change toward an opendoor policy is progressing slowly (4, 5, 6, 7), while the development of community psychiatric services is progressing rapidly. Goshen(8) stresses the value of the day hospital and recommends that each state accept the concept of the day hospital as

<sup>&</sup>lt;sup>1</sup> Silver Hill, Valley Rd., New Canaan, Conn.



an experimental substitute for new or expanded hospital buildings. Seale and Watkins(9) describe a day hospital especially designed to keep the patient in contact with the community. Fisher (10) criticizes such programs because of their lack of research orientation. Miller(11) emphasizes that the problems inevitably created by community participation in rehabilitation can be minimized if leadership is assumed by trained personnel. Leyberg(12) points out the advantages of psychiatric services in general hospitals but insists that a good relationship with a mental hospital is essential. Whitten(13) says that discharged patients must have rehabilitative services outside of the hospital if readmission is to be avoided and Muth(14) concludes from a survey of such services that there is great variation in the aid rendered. Ullman and Berkman(15) report that family care programs can markedly reduce the probability of readmission of discharged psychiatric patients. Klapper (16, 17) shows how local mental health associations can cooperate with various community agencies helping the patient and says that 38 of 86 leading rehabilitation centers include ex-mental patients in their programs. Irvine, Tracy and Fine(18) describe a statewide plan that supplements psychiatric hospital treatment with vocational rehabilitation which helps move the patient into the community and into employment. Many other programs that facilitate return of patients to productive extramural jobs are in progress(19, 20, 21, 22, 23, 24, 25, 26, 27). Likewise, movements are afoot to bring competitive industry into the hospital. Clark (28, 29, 30, 31) tells of a program of activity and freedom which includes contract electrical work brought into the hospital and Wadsworth, Scott and Tonge (32) Clark (29) report on a successful hospital workshop that has developed into a complete intramural factory. Minde(33) gives an account of a similar experiment conducted in conjunction with a rubber company. Benney(34) stresses the therapeutic · importance of work, while Bolin and Scott (35) say that work not only is of therapeutic value but also is one of the favorite activities of patients.

In the face of widespread enthusiasm for

the open-door policy, the expansion of community psychiatric services and the acceleration of the rate of discharge of mental hospital patients, voices of caution are heard. Sands (36) believes some patients are being returned to their homes completely unsuited to deal with their problems. Similarly, Slear (37) observes that tranquilizing drugs make it possible for many psychiatric patients to return to the community while they are still socially disabled individuals. And Kubie (38) challenges "the partial cure" and expresses concern over the problems thus created for the patient, the family and the community.

Psychiatric first aid, a method of rapid rehabilitation that has been employed successfully in the Netherlands for thirty years (39), is beginning to take root in the United States. Coleman and Zwerling(40) describe such a service being used advantageously in New York. Another rehabilitative facility used extensively in Europe, the Homemaker Service, which supplies mother substitutes for homes in which mothers are hospitalized for mental illness(41), is now being more widely employed in America(42).

Adjunctive therapies are playing an increasingly important role in rehabilitation. Key(43) thinks that training programs for coordinators of such therapies are needed. Sherwin (44) and Rosé, Brown and Metcalfe (45) discuss the use of music in rehabilitating psychiatric patients, while a group of specialists (46) considers how music can assist in the care of exceptional, emotionally disturbed, and brain-damaged children. Certain experts on recreation (47, 48) report on various phases of recreational and housebound patients and offer advice on recreation counseling for the mentally ill. Silson, Cohen and Hill(49) state that there is a need for well organized recreation programs under trained hospital staffs. Ackerman, Mitsos, and Seymour and Smith(50) describe camping programs and the latter author expresses the opinion that such activities help prepare hospitalized patients for their return to the community.

Psychiatric patients of a particular age or with particular types of problems receive special consideration from numerous investigators. In London, funds have been allocated for two hostels where children leavi:

ing schools for the educationally subnormal will be helped to find their places in the community(51). Tizard(52) visited the U. S. S. R. and studied mental health work, especially with children. His informative report stresses the generous staffing of all institutions and the excellence of psychological research in the Soviet Union. In New York, an important meeting was held to discuss problems of residents in homes for the aged (53). The principal theme under discussion was how to deal with mentally disturbed patients. Hobby therapy is considered important in such homes (54). Morrow and Rosenbaum (55) discuss the importance of psychiatry in the rehabilitation of the aged and conclude that a team of professional workers can best plan an effective mode of treatment. Ohio has developed 25 nursing homes to care for the mildly mentally ill(56). Although these homes have no arbitrary age limits for patients, the bulk of their work is with aged persons who would be burdens to their families, yet do not need the services of a mental hospital. Rainer and Kallman (57) report on a mental health project for the deaf and stress how psychiatric patients who have hearing defects have been neglected in the past. Rood(58) describes a method of rehabilitating sexual psychopaths by means of a hospital therapeutic community with an accent on group therapy and states that only 11% of 1,000 such patients have been recidivists.

The recent periodicals contain many publications dealing with relieving the emotional factors that obstruct the rehabilitation of the physically ill. Because of limitation of space, only a few of these papers can be considered. Zane(59) points out that physical rehabilitation is frequently adversely affected by personality traits developed as defenses against anxiety. Maritz (60) says that physical disability has a subjective meaning determined by the previously existing personality and both he and Cath(61) emphasize the role of the body image in the production of psychologic problems. Vernon(62) believes that successful rehabilitation of cardiac patients relies on relieving anxiety by demanding the patient's dependency and later by supporting a realistic program of restoration.

Rogers (63) suggests somewhat similar principles of rehabilitation for all chronically ill patients. Marmor (64) states that the process of rehabilitation consists of physical restoration, rehabilitation education and psychological rehabilitation and that psychological rehabilitation is the most important element.

Several books dealing with rehabilization have been published during the past year. The most comprehensive one is that edited by Rusk (65). He and his 37 collaborators have created a text which will serve as a reference for every member of the rehabilitation team. The chapter dealing with the rehabilitation of psychiatric patients is particularly well done. Simon (66) gives an excellent description of modern concepts of rehabilitation which center around the treatment of the whole person in all aspects of his life. Meyer and Borgotta (67) offer a critical evaluation of certain techniques used in rehabilitating discharged patients. Caudill(68) presents observations that seem to make it possible to predict the likelihood of group disturbances of various kinds. McLean and Taylor (69) discuss the maladjustments of the industrial worker, industrial practices and mental health aids in industry. The American Psychiatric Association has published an excellent book (70) that fully discusses the place of volunteers in programs of treatment and rehabilitation and the American Medical Association's Committee on Rehabilitation has approved a booklet that outlines ways to strengthen rehabilitation facilities at the grass roots level(71).

It is important to note that the United Kingdom has promptly implemented the significant Report of the Royal Commission on the Law Pertaining to Mental Illness and Mental Deficiency (72). Last July Parliament approved a bill (73) which embodies many of the changes recommended in the Report and which, when it soon becomes operative, will enable mentally ill persons to enter a hospital without signing a voluntary form and without power of detention by the hospital (74). Ob-iously, this far-sighted policy not only will bring about vast changes in the practice of psychiatry, but also will for the first time give the mentally ill the same legal status

as the physically ill. Carstairs and Wing (75) believe that the British public is ready for the changes recommended.

Occupational therapy has made progress in 1959. Leaders in the profession are focusing their attention on educational procedures (76) and curricula (77) in order to meet the demands of changing medical concepts. The American Occupational Therapy Association Study Plan, in preparation since 1951, approved in 1957 and supported by a substantial grant (78), is now under way. Many new ideas about training should come from this investigation. Other changes in the approach to the education of occupational therapists are also evident. The Committee on Graduate Study of the A.O.T.A. has prepared a plan for the development of graduate education leading to higher degrees in occupational therapy (79). According to Thompson(80), only four colleges in this country presently offer master's degrees in occupational therapy. Jantzen(81) urges graduate programs in occupational therapy that lead to specialization in psychiatry. Reilly (82) stresses the need for revision of the occupational therapy curriculum at a level of scientific knowledge upon which practice can rest. Azima and Azima(83) and Dunning(84) offer theories of psychiatric occupational therapy based on psychodynamic premises while Doniger (85) expresses the opinion that occupational therapy has attempted at times to go further than the present state of understanding in psychiatry warrants.

Robbins (86) and Dodson (87) believe that the occupational therapist has special tasks. Robbins points out that inasmuch as the occupational therapist is involved in changing the purposes of the person with whom he wishes to communicate, it is essential that he cultivate effective techniques of communication. Dodson believes that the occupational therapist must help society to understand and accept the rehabilitated person. Rood (88) notes that for the occupational therapist to develop successfully, stimulation must occur both from within and without.

The A.O.T.A. has taken steps to reduce the discrepancy between occupational therapists needed and occupational therapists available by presenting a plan for the training and recognition of occupational therapy assistants (89). Such a program has been activated in Ontario (90).

Ellis and Bachrach (91) insist that occupational therapy cannot function as an independent unit in a hospital. They hold that its value is in direct proportion to the comprehension of and coordination with the psychiatric staff. Smith, Barrow and Whitney (92) find that attitudes toward occupational therapy differ among different types of psychiatric patients. Tibbs (93) discusses the creative impulse and its value in therapy and Brown(94) describes "psycho-iconography," a method "of communicating through drawings and pictures." With this technique the patient is encouraged to draw any picture he wishes and the therapist interprets symbols presented and thus becomes aware of the patient's innerlife. Welsh (95) discusses the significant role which occupational therapy can play in the rehabilitation of alcoholics.

Two books dealing with occupational therapy published within the year have come to this reviewer's attention. Changing Concepts and Practices in Psychiatric Occupational Therapy (96) is an excellent presentation of current thinking as to how occupational therapy can best meet the needs of the hospitalized patient in terms of modern dynamic concepts. Rusk's Rehabilitation Medicine, referred to previously (65), has a chapter on the principles of occupational therapy.

## **BIBLIOGRAPHY**

- 1. DuBois, F.: Am. J. Psychiat., 115: 635, 1959.
- 2. Gruenberg, E.: Personal communication, 1959.
- 3. Hunt, R.: Ingredients of a Rehabilitation Program. In: An Approach to the Prevention of Disability from Chronic Psychoses; The Open Mental Hospital Within the Community. Proceedings of the 34th Annual Conference of the Milbank Memorial Fund, 1957, Part I. New York: Milbank Memorial Fund, 1958.
- 4. Snow, H.: Am. J. Psychiat., 115: 779, 1959.
- 5. Toolan, M., and Nicklin, G. : *Ibid.*, 115: 9, 1959.
- 6. Wisebord, N., et al.: Ibid., 115: 518, 1958.

- 7. Feuss, C., and Maltby, J.: Am. J. Occup. Ther., 13: 9, 1959.
- 8 Goshen, C.: Am. J. Psychiat., 115: 808, 1959.
- 9. Seale, A., and Watkins, C.: J. La. State Med. Soc., 110: 379, 1958.
  - 10. Fisher, S.: Ment. Hyg., 42: 463, 1958.
  - 11. Miller, W.: J. Rehab., 24: 13, 1958.
  - 12. Leyberg, J.: Lancet, 2: 282, 1959.
  - 13. Whitten, E.: J. Rehab., 24: 1958.
- 14. Muth, L.: After Care Services for the Mentally Ill; A World Picture. Huntington, W. Va.: The author, 1958.
- 15. Ullman, L., and Berkman, V.: Arch. Gen. Psychiat., 1: 57, 1959.
- 16. Klapper, M.: A Program for Vocational Rehabilitation for State and Local Mental Health Associations. New York: National Assoc. for Mental Health, 1958.
- 17. Klapper, M.: Ment. Hyg., 43: 378, 1959.
- 18. Irvine, L., Tracy, L., and Fine, I.: Employment Sec. Rev., 26: 17, 1959.
- Peffer, P.: Am. Arch. Rehab. Therapy,
   8, 1958.
- 20. Conners, J.: Personnel and Guidance J., 37: 369, 1959.
- 21. Rudd, J., and Feingold, S.: Arch. Phys. Med. and Rehab., 40: 29, 1959.
- 22. Fraenkel, W.: Fundamentals in Organizing a Sheltered Workshop for the Mentally Retarded. New York: National Association for Retarded Children, 1958.
  - 23. Ment. Hosp., 9: 48, 1958.
- 24. Martin, H., et al.: Ibid., 10: 27, 1959.
- 25. Grover, E., and Calvert, J.: J. Rehab., 24: 20, 1958.
- 26. Wing, J., and Giddens, R.: Lancet, 2: 505, 1959.
  - 27. Stern, E.: *Ibid.*, 2: 62, 1959.
- 28. Clark, D., and Hoy, R.: The International J. of Social Psychiat., 3: 212, 1957.
- 29. Clark, D.: Personal communication, 1959.
- 30. Clark, D.: Fulbourn Industries, A Report, 1959.
- 31. Clark, D.: Personal communication, 1959.
- 32. Wadsworth, W., Scott, R., and Tonge, W.: Lancet, 2: 896, 1958.
- 33. Minde, M.: South African Med. J., 32: 709, 1958.
  - 34. Benney, C.: J. Rehab., 25: 13, 1959.
- 35. Bolin, B., and Scott, D.: Am. J Psychiat., 115: 246, 1958.
  - 36. Sands, S.: Ibid., 115: 748, 1959.
  - 37. Slear, M.: Social Work, 4: 64, 1959.
  - 38. Kubie, L.: J. Rehab., 25; 6, 1959.
  - 39. Baars, C.: Ment. Hosp., 10: 18, 1959.

- 40. Coleman, M., and Zwerling, I.: Am. J. Psychiat., 115: 980, 1959.
  - 41. Aldrich, C.: *Ibid.*, 114: 993, 1953.
  - 42. Rehab. Literature, 20: 77, 1959.
- 43. Key, W.: Project 52; A Study in Ajjunctive Therapies Coordination. Tooleka: Washburn University, 1958.
- 44. Sherwin, A.: J. Nerv. and Mental Dis., 127: 84, 1958.
- 45. Rosé, A., Brown, C., and Metcalf≡, E.: Ment. Hyg., 43: 93, 1959.
- 46. Gaston, E.: Music Therapy, 1957; Seventh Book of Proceedings of the National Association for Music Therapy; Fapers from the Eighth Annual Conference. Lawrence, Kansas: Allen Press, 1958.
- 47. Proceedings of the Third Hospital Recreation Institute: Recreation for the II and Handicapped Homebound. New York. National Recreation Association, 1958.
- 48. Rathbone, J., and Lucas, C.: Recreation in Total Rehabilitation. Springfield, Ill.: Charles C Thomas, 1959.
- 49. Silson, J., Cohen, E., and H.ll, B.: Recreation in Hospitals: Report of a Study of Organized Recreation Programs in Hospitals and of the Personnel Conducting Them. New York: National Recreation Association, 1959.
- 50. Ackerman, O., Mitsos, S., Seymcur, A., and Smith, B.: Ment. Hosp., 10: 16, 1959.
  - 51. Lancet, 2: 914, 1958.
  - 52. Tizard, J.: *Ibid.*, 11: 1325, 1953.
  - 53. J. Rehab., 24: 28, 1958.
- 54. Hobby Therapy as an Activity in Homes for the Aged. Los Angeles: Senior Citizens Service Center, 1958.
- 55. Morrow, T., and Rosenbaum, D.: J. Kan. Med. Soc., 59: 215, 1953.
  - 56. J. Rehab., **25**: 35, 1959.
- 57. Rainer, J., and Kallmann, F.: Tr. Am. Acad. Ophth., 63: 179, 1959.
- 58. Rood, R.: Am. J. Psychiat, 115: 512, 1958.
- 59. Zane, M.: Arch. Phys. Med. and Rehab., 40: 197, 1959.
- 60. Maritz, J.: Rehab. in S. Africa, 2: 93, 1958.
- 61. Cath, S., et al.: Psychoanalytic Rev., 44: 34, 1957.
  - 62. Vernon, C.: J. Rehab., 24 18, 1958.
  - 63. Rogers, E.: G.P., 18: 112, 1958.
- 64. Marmor, J.: Calif. Med., 88: 350,
- 65. Rusk, H.: Rehabilitation Medicine. St. Louis: C. V. Mosby Co., 1958.
- 66. Simon, B.: New Trends in Rehabilitation. In: Progress in Psychotherapy. New York: Grune and Stratton, Inc., 1959.
  - 67. Meyer, H., and Borgatta, E.: An Ex-

periment in Mental Patient Rehabilitation. New York: Russell Sage Foundation, 1959.

68. Caudill, W.: The Psychiatric Hospital is a Small Society. Cambridge: Harvard Univ.

Ness, 1958. 69. McLean, A., and Taylor, G.: Mental Health in Iudustry, New York: McGraw-Hill, Blakiston Division, 1958.

70. The Volunteer and the Psychiatric Patient. Washington: APA, 1959.

71. Rehab. Literature, 20: 192, 1959.

72. Report of Royal Commission on the Law Relating to Mental Illness and Mental Deficiency, 1954-1957. London: Her Majesty's Stationery Office, 1957.

73. Clark, D. Rersonal communication, 1959. 74. Donnelly, J.: Personal communication,

75. Carstairs, G., and Wing, J.: Brit. Med. J., **5096** : 594, 1958.

76. Am. J. Occup. Ther., 12: 1958.

77. Willard, H.: Ibid., 13: 173, 1959

78. *Ibid.*, 12: 332, 1958.

79. *Ibid.*, **12**: 334, 1958.

80. Thompson, C.: *Ibid.*, 12: 322, 1958.

81. Jantzen, A.: *Ibid.*, 12: 314, 1958.

82. Reilly, M.: Ibid., 12: 293, 1958.

83. Azima, H., and Azima, F.: Ibid., 13: 215, 1959.

84. Dunning, E.: Ibid., 13: 235, 1959.

85. Doniger, J.: *Ibid.*, **12**: 303, 1958.

86. Robbins, S. : *Ibid.*, **13** : 183, 1959. 87. Dodson, D. : *Ibid.*, **13** : 189, 1959.

88. Rood, M.: Ibid., 12: 326, 1958.

89. *Ibid.*, **12**: 269, 1958.

90. Mansfield, N.: Can. J. Occup. Ther., **26**: 51, 1959.

91. Ellis, M., and Bachrach, A.: Am. J. Psychiat., 115: 318, 1958.

92. Smith, P., Barrow, H., and Whitney,

J.: Am. J. Occup. Ther., 13: 16, 1959

93. Tibbs, T.: *Ibid.*, **13**: 201, 1959.

94. Brown, W.: *Ibid.*, **13**: 200, 1959.

95. Welsh, J.: *Ibid.*, **13**: 157, 1959.

96. Changing Concepts and Practices in Psychiatric Occupational Therapy. New York: American Occupational Therapy Association, 1959.

# **COMMENT**

## GENERAL MEDICINE BEFORE SPECIALIZATION

The age of specialization has created many problems. The most disturbing of these seems to be the apparent isolation of the specialist from man as a whole being, which narrows his perspective and limits his usefulness. The specialist in his zeal to know all about his specific field is in danger of concentrating on only a small part of man, thus dividing the whole into many small parts, each an island to itself. I believe that much of this tendency could be corrected without in any way interfering with the tremendous gains in medicine brought about by specialization.

My premise is simply that we permit specialization much too soon, long before mature judgment and clinical experience have become a part in that decision.

As psychiatrists, we stress the importance of our being acutely aware of the total person. Yet paradoxically we prejudice such a possibility from the onset by our approach to the training program. We do not give the young doctor an opportunity to learn firsthand the practical knowledge of his fellow man. From the very start of his academic career he lives a sheltered and isolated existence. His life is made up of school and hospital work; college, medical school, internship and then three to five years of intensive study confined to the area inside the cranium. And then when he finally starts to practise he usually limits himself to a further subspecialty!

I believe there should be a break in this academic routine of, say, two or three years, during which the young doctor will be actively engaged in the field of general

practice. No man can be a good spec\_alist unless first he be a good doctor and is well grounded in all of man's basic problems. As I see it, knowing how man lives is the most basic of all the requisites to the proper understanding of man. And nowhere can one learn this as effectively and wholesomely as in the field of general practice. Years of hospital and university training can never prove an adequate substitute. Only through the broadening influence of coming in constant contact with man, his family, his social, physical and emotional states, his ticking as a whole man in his home and environment and not as an isolated part of himself, can a proper understanding be reached.

In addition, from the experience gained from a period of general practice will come the insight to guide the young doctor to the specialty wherein he will be best suited and happiest. His choice will come not from some preconceived idea or from what residency happens to be available, but from having practised all of the specialties daily he will have learned in which special field he is most talented.

And finally the barrier between the specialist and the general practitioner will be removed, for now the specialist is no foreigner speaking a foreign language but one who, having shared a common practical experience, can communicate with his fellow practitioners in understandable medical terms.

Nathan K. Rickles, M.D. Beverly Hills, Calif.

### CORRESPONDENCE



### THE PRESENCE OF ADRENOCHROME IN BLOOD

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

Sm: Recently Szara, Axelrod and Perlin (3) reported in this JOURNAL that they had developed a sensitive and specific method for estimating adrenochrome in plasma. Using this method, they found less than 20 μg./liter of some nonspecific fluorescent substance. They therefore concluded that adrenochrome is not present in plasma. On the other hand, using an altogether different method(2) based upon the method of Fischer, Derouaux, Lambot and Lecomte(1), we have found that adrenochrome or something very much like it is present. The concentration is increased after giving volunteers d-LSD-25 (not after Brom LSD or LSM) and after the injection of solutions of crystalline adrenochrome intravenously.

We have now examined the method described by Szara, et al.(3) and believe we have an explanation for these discrepancies.

We have compared both methods. In order to avoid the issue now whether adrenochrome is naturally present in plasma, we injected 10 mg. of authentic adrenochrome in saline intravenously into a schizophrenic patient. Ten minutes later, 20 mls. of blood was removed from the arm and placed in a flask containing heparin. This blood, known to contain adrenochrome, was centrifuged and the plasma divided into two portions. One portion was analyzed by our method and the other by the Szara method. The fluorescence readings are shown in the following table.

#### FLUORESCENCE READINGS (SAME SCALE) OF ADRENOLUTIN FROM PLASMA CONTAINING IN JECTED ADRENOCHROME

111/20122 212/02/10	CITICONIL	
- C	our Method	Szara Method
Plasma and 1 µg. adrenochrome	0.56	0.045
Plasma alone	0.31	0.0115
Blank	0.21	0.0090
Increase of plasma over blank	0.10	0.0025
Increase due to 1 µg.	0.25	0.0335
Apparent adrenochrome conc.	400	76
	μg./lite	r μg./liter

With our method, the fluorescence increase with 1 µg. authentic adrenochrome

was 0.25 units compared to an increase of 0.0335 units by the Szara method using the same scale on the Farrand Spectrofluorometer, *i.e.* the latter method yielded about % the fluorescence. With our method, the plasma reading was 0.31 or 0.10 units above the plasma blank. With the Szara method, it increased 0.025. Our blank is high in this instance due to the high conversion of adrenochrome to adrenolutin in plasma. The blank or plasma when adrenochrome has not been injected is low.

The fluorescence readings by the Szara method are so low that it does not find adrenochrome. Thus blood known to contain added adrenochrome had 400 µg./liter by our method and only 76 µg./liter by the Szara method. This latter value is in doubt because the plasma reading was so close in fluorescence to the blank. If we assume the same ratio of sensitivity between the two methods then obviously plasma which would contain 50 µg. by our method would have been less than 20 µg. by the other method.

If therefore the Szara method is sensitive, ours is about 8 times more sensitive. If their method is specific, so is ours, since in both methods the specificity depends upon the conversion of adrenochrome into adrenolutin in the presence of ascorbic acid.

The Szara, Axelrod, Perlin method is therefore not sufficiently sensitive to help us decide whether or not adrenochrome is really present naturally in plasma.

> A. Hoffer, M.D., A. N. Payza, M.D., University Hospital, Saskatoon, Sask., Can.

#### BIBLIOGRAPHY

- 1. Fischer, P., Derouaux, G., Lambot, H., and Lecomte, J.: Bull. Soc. Chim. Belg., 59: 72, 1950.
- 2. Payza, A. N., and Mahon, M. E.: Analytical Chemistry. In Press.
- 3. Szara, S., Axelrod, J., and Perlin, S.: Am. J. Psychiat., 115: 162, 1958.

4



Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

Sm: In view of the implications of the claim that adrenochrome is present in the blood(1) we felt it necessary to try to confirm it. As customary, we published the results along with the method used (2). The discrepancy between our and Dr. Hoffer's results most probably stems from the difference in the methods used. However, we cannot directly compare our method with Dr. Hoffer's since the latter has not been published. The original article of Fischer, et al.(3) and even Dr. Hoffer's most recent article about "The Adrenochrome Model and Schizophrenia"(4) in which he presents again figures on the level of adrenochrome in the blood, give no sufficient details of the method. Therefore in making comparisons we must use the data reported. Two aspects of the analytical methods should be discussed here: the sensitivity and the specificity.

It is a well-known fact in analytical chemistry that the sensitivity of a method depends upon the magnitude of the blank. As the blank increases, the sensitivity decreases. Although Dr. Hoffer's reading reported here for 1 µg. adrenochrome is about 8 times greater than ours (0.25 vs. 0.0335) his blank value is more than 23 times higher (0.21 vs. 0.0090). Consequently, when measuring small amounts of adrenochrome, the precision of the method is greatly reduced. For example, it is claimed that in plasma of normal subjects 50 µg./ liter adrenochrome is present(1): when LSD is given, the value rises to 164 µg./liter (1). The blank value reported in Dr. Hoffer's paper is 0.21. The reading which adrenochrome in plasma would give using his method after the blank value 0.21 was subtracted would be 0.01 in normal subjects and 0.04 in subjects receiving LSD. This represents an increase over the blank reading from 5 to 20%. Considering the variations in the blank and the instrument fluctuations, it is virtually impossible to reach any conclusions concerning the plasma levels of adrenochrome from those readings. Furthermore, the nature of the blank which contains adrenochrome converted to adrenolutin is very ambiguous. Perhaps the availability of a published procedure would clarify this important question.

It might be pointed out that sens tivity of a method also depends on the instrument employed. The instrument we used was an Aminco Bowman Spectrophoto-fluorometer which proved to be sufficiently sensitive to measure as little as  $0.02 \,\mu \, \text{g./ml.}$  adrenochrome. The accompanying table gives the values we obtained in our laboratory.

### GALVANOMETER READINGS ON THE AMINCO BOWMAN SPECTROPHOTOFLUOROMETER USING OUR METHOD

	Scale Deffections :
0.2 µg. Adrenochrome added and	
recovered from water	62±2
0.2 µg. Adrenochrome added and	
recovered from plasma	63±3
Plasma No. 1 extracted by our method	12二1
Plasma No. 2 extracted by our method	10土2
Reagent Blank	4土1

\* Mean and deviation of duplicate determinations not corrected for reagent blank.

It can be seen from these data that our method is extremely sensitive and can measure as little as 0.02 µg./ml. (20 µg./liter), which would give a reading more than twice as much as the blank.

Actually our readings with plasmas Nos. 1 and 2 were in this order of magnitude, but this does not prove the presence of adrenochrome in the plasma, since this fluorescence—as we pointed out in our original note—did not possess the characteristic activation and the fluorescence spectra. Further data show that only the added adrenochrome could be recovered from plasma, and no additional significant elevation of the specific fluorescence was observed.

The specificity of our method is based on the fact that adrenochrome is extracted into organic solvent only in a pH range between 4 and 5; this insures the elimination of interfering materials, which is reflected in the very low blank values. The adrenochrome is converted to adrenolutin after it has been isolated. Dr. Hoffer has not published any data on the specificity of his method or on the identity of adrenothrome found in biological material.

Stephen Szara, M.D., D.Sc.,
Clinical Neuropharmacology
Research Center,
National Institutes of Mental Health,
Saint Elizabeths Hospital,
Washington 20, D. C.
Julius Axelrod, Ph.D.,
Laboratory of Clinical Sciences,

National Institute of Mental Health, Bethesda 14, Md.

#### **BIBLIOGRAPHY**

- 1. Hoffer, A.: Am. J. Psychiat., 114: 752, 1958.
- 2. Szara, S., Axelrod, J., and Perlin, S.: Am. J. Psychiat., 115: 162, 1958.
- 3. Fischer, P., Derouaux, G., Lambot, H., and Lecomte, J.: Bull. Soc. Chem. Belg., 59: 72, 1950.
- 4. Hoffer, A., and Osmond, H.: J. Nerv. & Ment. Dis., 128: 18, 1959.

## . DR. KARPMAN'S BOOK : THE HANGOVER

Editor, THE AMERICAN JOURNAL OF PSYCHI-ATRY:

Sir: In the course of many years of publishing, I have ere long resolved never to argue with a book reviewer. They are a peculiar lot, have a peculiar psychology all their own, and to argue with them is like trying to break through a Chinese wall. But one has to correct an error which is so glaring and obvious. In the review of my book, The Hangover, by Dr. Stephen Fleck in the August number of the Journal, the statement is made that the hangover is not otherwise defined, suggesting that there is no definition given. This is absolutely untrue. On page 521 of the book I give more than a half page definition of the hangover, clearly titled "definition," which is the result of the many definitions which grew out of the material of my patients. Additionally, I also have explained the meaning of the concept on pages viii to xi which the reviewer has apparently overlooked. How does it happen that a book that gives almost a page of definition has escaped the notice of the book reviewer? The explanation is found in the fact that by some oversight, the word definition did not appear in the index. The reviewer is apparently the type of man who does not read carefully the book from cover to cover as one should, but depends upon the index and the table of contents. If the index does not contain the word definition, then in his opinion a definition is never given, which is incorrect at least in this instance.

In another place, the reviewer further states that there is no description of the method whatsoever. I would assume that the reviewer is a psychiatrist who knows how to interview people. This work was done by a combination of interviewing and writing. My approach was that of a clinical researcher, the purpose of the book, as the title suggests, being to examine the meaning of the hangover as a psychological phenomenon. The hangover was made the variable while all the rest was left constant. Therefore, my main concern was that of eliciting the hangover and not to be concerned with secondary considerations of family relationships, and so on. This should belong to and is planned for another study.

It would be tempting to go through the whole review and point out the inaccuracies, but I am chary of the space that an editor can afford to give to the correction of an error.

Benjamin Karpman, M.D., Washington, D. C.

### REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Thank you very much for the opportunity to respond to Dr. Benjamin Karpman's letter criticizing my review of his book *The Hangover*, but I believe the value of the book and the pertinence or imper-

tinence of the review can be left to the judgment of the readers. May there be a lot of the latter whose lot is not that of the reviewer.

Stephen Fleck, M.D., New Haven, Conn.

#### NEWS AND NOTES

AMERICAN BOARD FOR PSYCHOLOGICAL Services, Inc.—The Board has released its 1960 Directory of American Psychological Services which is a voluntary listing of agencies and individuals providing competent psychological services. These services are listed alphabetically by state or province and city, with all necessary data. There is also a geographical listing of the diplomats of A.B.E.P.P. Most of the states and 3 Canadian provinces are included. Copies may be obtained from the American Board for Psychological Services, Inc., Glendale, Ohio, for \$1.50.

í:

Dr. BOWMAN AGAIN IN THE FAR EAST. -Dr. and Mrs. Karl M. Bowman sailed on November 5 to the Far East where he will again be Visiting Professor of Psychiatry at the Siriraja Medical College in Bankok. He will be occupied in this work until about the first of April.

WORLD FEDERATION FOR MENTAL HEALTH. -At the recent meeting of the World Federation for Mental Health, William T. Beaty, II, Assistant Executive Director of the New York State Association for Mental Health of the State Charities Aid Association, was elected President of the United States Committee of the World Federation.

Re-elected were Honorary Presidents Mrs. Clifford W. Beers, Dr. Earl D. Bond, Mrs. Henry Ittleson and Dr. Arthur H. Ruggles. Other officers elected were Mrs. Jonathan Bingham, Chairman of the Governing Board and Mrs. George A. Stern, Chairman of the Executive Committee; Dr. Robert L. Sutherland, Treasurer and Dr. George S. Stevenson, Assistant Treasurer. Newly-elected to the Governing Board were Dr. Margaret Mead, Dr. Bertram H. Schaffner and Lewis Cullman.

DR. RUGGLES HONORED.—At the first meeting of the Rhode Island Branch of the American Psychiatric Association, October 26, 1959, Dr. Arthur H. Ruggles, past president of the American Psychiatric Associa-

tion and former superintendent of Butle Hospital and Emma Pendleton Hospital was the guest of honor. A library in the newwing of the Fuller Memorial Sanitarium, South Attleboro, Mass., was dedicated to Dr. Ruggles. He presented a portrait of himself which will hang in the new library.

Dr. Lawrence Senseman, medical director of the Sanitarium, read the tribute to Dr. Ruggles: "An outstanding figure in American psychiatry, he has be∈n a true friend to all of us in our psychiatric youth and maturity. He has always been the friendly advisor, liberal in his encouragement, ready to give wise counsel when needed."

Officers of the society for the forthcoming year were elected as follows: Dr. David Fish, president; Dr. Barry Mongello, vicepresident; Dr. Joseph Zucker, secretarytreasurer; and Dr. Sidney Goldstein and Dr. Laurence A. Senseman, counsellors.

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.—The following candidates were certified by this Ecard after examination in Chicago, Ill., October 19 and 20, 1959.

**PSYCHIATRY** Adams, Robert W., Jr., 614 Medical Arts Bldg, Nashville 12, Aivazian, Garabed H., 92 East Charlotte Cir-le, Memphis

Aivazian, Garabed H., 92 East Charlotte Cir-le, Memphis 17, Tenn.
Arndt, George William, VA Hosp., Tomah, Wis.
Arnold, Arthur L., 2821 California St. N. E, Albuquerque, N. Mex.
Ashley, Milton Miller, 322 East Hadley St., Whittier, Cal.
Averill, Stuart C., 4309 Stratford Rd., Topeka, Kan.
Badrock, Frank, State Hosp. as Butner, Butner, N. C.
Baker, James Edward, VA Center, Box 82, Togas, Maine.
Baker, Robert James N., 8149-51 Jenkins Arcade, Pittsburgh 22, Pa.
Baratta, Philip A., Jr., Eastern Penasylvania Psychiatric Inst., Henry Ave. and Abbottsford Rd., Phäadelphia 29, Pa.

Pa.
Bennett, Austin W., Western Psychiatric Inst and Clinic, 3811 O'Hara St., Pittsburgh 13, Pa.
Berkwits, Gloria Kozin, 537 Brompton, Chicago 13, Ill.
Berk, Alfred, 33 East 74th St., New York 21, N. Y.
Berts, Charles Samuel, Univ. of Arkansas Medical Center, 4301 West Markham, Little Rock, Ark.
Bimmerle, John F., 720 Lake St., Oak Park, IL.
Brandes, Norman Scott, 278 East State St., Columbus 15, Ohio.

Ohio.

Ohio.

Ohio.

Prowne, William J., Univ. of Pittsburgh, Stæunton Clinic, 3601 Fifth Ave., Pittsburgh 13, Pa.

Cabrera, Orlando, Osawatomie State Hosp., Osawatomie, Kan. Christ, Jacob, 51 Brattle St., Cambridge 38, Nass.

Coda, Evis John, 1737 Prytania St., New Orleans 12, La.

Cole, Charles E., Columbus Psychiatric Inst and Hosp.,

Columbus, Ohio.

Cox, James A., Jr., 1301 N. E. Sixth St., Cklahoma City

17, Okla.

Davis, Paul Eve, Jr., Western State Hosp., Hopkinsville, Ky.

Duncan, Glen Malcolm, 200 First St. S. W., Rochester, Minn.

Dunn, Charles W., 6018 West Fullerton Ave. Chicago 39,

Ill.

Edwalds, Robert M., Galesburg State Hosp., Galesburg, III. Fang, Ai Ding, VA Hosp., Perry Point, Md. Farrell, Mark P., Jr., 215 Petroleum Bldg., Casper, Wyo. Finkle, Theodore Herzl, 240 East 76th St., New York 21, N. Y.

Flinn, Don E., School of Aviation Medicine, Brooks Air Force Base, Tex. Force Base, 1ex.
Soster, Randell M., 1477 South Barrington Ave., Los Angeles
Soster, Randell M., 1477 South Barrington Ave., Los Angeles
Claze, Max A., 2538 East Monta Pl., Muskogee. Okla.
Goodman, Lowell Irvin, 907 South Wolcott, Chicago 12,

Ill.
Goodwin, Ben Allen, 1454 Summertime, Dallas 16, Tex.
Gould, Russell L., Agnew State Hosp., Agnew, Calif.
Green, Robert F., 27 Fruit St., Worcester 9, Mass.
Gross, David P., Room 1816, 30 North Michigan Ave.,
Chicago 2, Ill.
Haas, Adolph, Box A, Ypsilanti, Mich.
Halleck, Seymour L., University Hospitals, 1300 University
Ave., Madison 6, Wis.
Hatt, Donald L., 1231 North 29th St., Billings, Mont.
Hart, William T., 260 Crittenden Blvd., Rochester 20, N. Y.
Hudson, Carlos Lee, 306 Boston Post Rd., Weston, Mass.
Hudson, Heber Scott, 504 East 17th Ave., Olympia, Wash.
Isaac, Robert Haines, 816 Fourth St., Santa Rosa, Calif.
Janis, Joseph C., VA Hosp., Tomah, Wis.
Jeans, Robert Frederick, 1209 East Madison Park, Chicago 15,
Ill.
Jones, Robert S., 2701 West 21st St., Topeka, Kan.

Jones, Robert S., 3701 West 21st St., Topeka, Kan. Kenefick, Donald P., Medfield State Hosp., Harding, Mass. Kibbe, Milton H., Lynchburg Treining School and Hosp., Colony, Va.
Kirkparick, Martha, 450 North Bedford Dr., Beverly Hills,

Calif.
Kitt, Walter, 30 North Michigan Ave., Chicago 2, Ill.
Krystal, Henry, 19210 Coyle Ave., Detroit 35, Mich.
Kuhn, Charles P., 551 East Lafayette, Detroit 7, Mich.
Kulick, Alan H., VA Hosp., Coatesville, Pa.
Lachman, Jordan H., 34 West 10th St., New York 11, N. Y.
Law, Arthur Gregory, Chief, Mental Hygiene Consultation
Service, Fort George G. Meade, Md.
Marten, George Wenceslas, 2530 Eveningside Drive, Topeka,
Kan.
McCawley, Austin, 200 Retreat, Aug. Hartford, Conn.

Kan.
McCawley, Austin. 200 Retreat Ave., Hartford, Conn.
McLean, Preston G., 1143 Fifth Ave., New York 28, N. Y.
McPherson, Warren G., Jr., 30 North Michigan Ave.,
Chicago 2, Ill.
Mendel, Werner M., 11902 East Rosecrans Ave., Norwalk,

Mendel, Calif.

Meza, Pedro, 706 Marlborough St., Detroit 15, Mich. Moore, Evan Gregory, 2367 Madison St., Gary, Ind. Moss, Benjamin Fraser, Jr., 1423 Harper St., Augusta, Ga. Newman, George F., 41001 Seven Mile Rd., Northville,

Mich.
Norgan, Anne F., 133 Waubascon Dr., Battle Creek, Mich.
Norsaius, Morton S. 429 Pan American Bank Bldg., Miami 32, Fla.

247 Kept Dr., Birmingham 9, Ala.

D., Pia.

Nuckols, Frank J., 247 Kent Dr., Birmingham 9, Ala.

Ordway, John Amos, 7 Rural Lane, Cincinnati 20, Ohio.

Owens, Thomas Charles, Oak Hill R. D. No. 4, Dallas, Pa.

Parmalee, Charles E., 5 Medical Square Bldg., 535 East

First South, Salt Lake City, Urah.

Parrish, Matthew Denwood, U. S. Army Hosp., Fort Belvoir,

Perlin, Seymour, Certer for Advanced Study in the Behavioral Sciences, 202 Junipero Serra Blvd., Stanford, Calif. Peters, Dale W., 3200 North May Avenue, Oklahoma City 12, Okla.

12, Okla.
Piekenbrock, Thomas C., 1200 Main St., Dubuque, Ia.
Platt, Victor Donald, 750 South State St., Elgin, Ill.
Reitmann, John H., Hastings State Hosp., Hastings, Minn.
Roberts, Leigh M., University Hospitals, 1300 University
Ave., Madison 6, Wis.
Robison, William P., 1423 Harper St., Augusta, Ga.
Ross, Donald Campbell, 4951 McKean Ave., Philadelphia
44, Pa.
Rozanski, Jules P. D. Box 96 West Brentwood N. V.

A4, F2.
Rozanski, Jules, P. O. Box 96, West Brentwood, N. Y.
Sable, Arthur D., 2150 South Ridgeland Ave., Berwyn, Ill.
Schramm, Theodore Adam, Medical Arts Bidg., 1169 Eastern Pky, Louisville 17, Ky.

Shaw, Charles Raymond, 18471 Haggerty Rd., Northville, Mich.

Mich.

Simmons, Abbott Philip, Brentwood Hosp., VA Center, Los

Angeles 25, Calif.

Smith, Jerome Allen, 1610 Great Plains Bldg., Lubbock, Tex.

Smith, W. T., State Hosp., Milledgeville, Ga.

Solon, Earl N., 700 North Michigan Ave., Chicago 11, Ill.

Starr, Dorothy A., 3000 Connecticut Ave., Washington 8,

D. C.

D. C.
Starrett, David Edward, Univ. of Colorado Medical Center,
4200 East Ninth Ave., Denver 20, Col.
Thomas, John B., 300 Patton Drive, Cheshire, Conn.
Tippett, Donn L., 101 Maple St., Maywood, Ill.
Tucker, Elizabeth Mickay, Box W, Newtown, Conn.
Tunakan, Tahir Belent, Nebraska Psychiatric Inst., 602
South 44th St., Omaha 5, Neb.

Vernon, Charles R., Univ. of North Carolina, Chapel Hill, N. C., Box 1020.

Vosburg, Robert Louis, Western Psychiatric Inst. and Clinic, 3811 O'Hara, Pittsburgh 13, Pa.

Walters, Orville S., 405 West Delaware, Urbana, Ill.
Welch, Victor Clifford, VA Hosp., Perry Point, Md.
Wellhouse, James Lansing, U. S. Public Health Service Hosp.,
Wyman Park Drive at 31st St., Baltimore 11, Md.
Wiemers, Eugene Lee, Urah State Hosp., Provo, Urah,
Wilson, Frederic William, Traverse City State Hosp., Traverse
City, Mich.
Wright, Harold L., Jr., 19850 Westhill, Northville, Mich.

NEUROLOGY

NEUROLOGY

Bonsett, Charles Allen, 902 Hume Mansur Bldg., Indianapolis 26, Ind,
Gerschwind, Norman, Neurology Service, Boston VA Hosp., 150 South Huntington Ave., Boston, Mass.
Joynt, Robert James, University Hospitals, Department of Neurology, Iowa City, Iowa.
Koenig, Harold, VA Research Hosp., 333 East Huron St., Chicago 11, Ill.
Loeser, Eugene W., Jr., Division of Neurology, University of North Carolina School of Medicine, Chapel Hill, N. C.
Lombroso, Cesare T., 28 Allerton St., Brookline 46, Mass.
Nelson, Dewey A., Professional Bldg., Wilmington 3, Dela.
Rosenbaum, Herbert E., 7393 Westmoreland Dr., University City 30, Mo.
Sanchez Longo, Luis P., Calle Wilson No. 1475, Santurce, Puerto Rico.

Puerto Rico.
Ch'eng, Leslie Yu-lin, Northern State Hosp., P. O. Box 309, Sedro-Wooley, Wash.

PSYCHIATRY AND NEUROLOGY Dutch, Stephen J., Jr., 602 South 44th Ave., Omaha 5, Neb.

Dr. Foret Heads De Paul Hospital.— Dr. Justillien H. Foret has been appointed medical director of De Paul Hospital in New Orleans to succeed Dr. Walter I. Otis who died in June 1959.

Dr. Foret, a graduate of Louisiana State University Medical School, had his psychiatric training at Worcester (Mass.) State Hospital, served five years as clinical director at Blythewood Sanitarium, Greenwich, Conn. and since 1952 as clinical director at De Paul Hospital.

COL. GLASS RECEIVES THE GORGAS AWARD. —Col. Albert J. Glass, chief psychiatry and neurology consultant to the Army's surgeon general's office, has received the Gorgas Medal for his pioneer role in preventive, psychiatry.

The Gorgas award, consisting of a silver medallion, a citation, and a check for \$500, was presented during the annual dinner of the Association of Military Surgeons in the Mayflower Hotel, Washington, D.C., November 12, 1959.

Dr. Glass, a veteran Army psychiatrist, is the 17th recipient of the Medal, presented annually for distinguished service in military medicine. The award is made by Wyeth Laboratories in memory of Surgeon General William C. Gorgas, whose work in controlling yellow fever made possible the construction of the Panama Canal.

4

In presenting the Medal, Dr. Robert S. Warner, a member of the Wyeth medical staff, stated that Dr. Glass' studies during World War II and the Korean Conflict resulted in a substantial reduction in combat time lost by victims of psychiatric disorders. In the peacetime Army, his work has been credited with an all-time low in the number of men hospitalized with such disorders and the number of offenders imprisoned.

During World War II, Col. Glass was an Army division psychiatrist and in the Korean Conflict was chief neuropsychiatric consultant to the Far East Command.

During his 18 years with the Army, Dr. Glass has been associated in executive capacities with the neuropsychiatric programs of a number of Army hospitals, serving most recently as chief of the neuropsychiatry department of Walter Reed Army Hospital.

His decorations include the Legion of Merit and the Bronze Star.

Association for the Advancement of Psychoanalysis, Inc.—The Association announces the eighth annual Karen Horney Lecture to be given by Dr. David McK. Rioch, director of neuropsychiatry at Walter Reed Army Institute of Research. The title is "Recent Contributions of Neuropsychiatric Research to the Theory and Practice of Psychotherapy." The meeting will be held on March 23, 1960 at 8:30 p.m. at

Hosack Hall, at the New York Academy of Medicine, 2 East 103rd Street, New York City.

NATIONAL MENTAL HEALTH RESLARCA FUND, CANADA.—The Canadian Mental Health Association, who have set up this research fund, announce that a grant amounting to \$22,500 for the ensuing year has been awarded to Rev. Dr. Noël Mailloux, director of the Human Relations Research Centre in Montreal. The subject of investigation is the personality of delinquent boys with a view to their proper treatment in custody.

Realizing that annual or biennial government budgeting, by necessity, produces "project" or short-term research and that uninterrupted work is also necessary in mental health research, the Canacian Mental Health Association voted in 1957 to establish a fund to this end, so that researchers can work unencumbered by the uncertainty of annual budgets or red tape. Grantees are protected for the period agreed to (usually 5 years). Those who wish to devote a considerable period to research in this field may apply by personal letter to the Director, The National Mental Health Research Fund, The Canadian Mental Health Association, 11½ Spadina Road, Toronto 4, Ont.

The general director is J. D. Griffin, M.D.; senior staff, G. A. Gamble, E. Johnstone, G. Rohn; consultants, C. M. Hincks, M.D., W. Line, Ph.D.

#### HABIT

Habit is a cable; we weave a thread of it every day, and at last we cannot break it.

-HORACE MANN.

## **BOOK REVIEWS**

FINCYCLOPEDIA OF MORALS. Edited by Virgilius Ferm. (New York: Philosophical Library, 1958, pp. 682. \$10.00.)

Johnson says that morals (noun, without a singular) is "the practice of the duties of life; behavior with regard to others." The Latin origin is mores which simply means manners. In common use morals is likely to mean not simply manners but good manners, sometimes even with a religious overtone. The theoretical aspect of communal living is the province of the philosopher while the common practices of ethnic groups in their daily life fall to the anthropologist. It is he who observes the beginning of religious beliefs and practices.

This encyclopedia covers the whole range of human attitudes; it includes the doctrines of the major religions insofar as they do not over-emphasize supernaturalism "as over against the day-to-day existence of the natural order." The material of the book is contributed by 52 carefully selected authors from a dozen fields, philosophy being in the majority, with anthropology and religion or theology following. The leading colleges and universities of America are represented by this panel of writers.

The subject matter is arranged alphabetically, with many cross-references, thus assuring access to almost any topic about which the reader may seek information whether it is given a separate alphabetical entry or not. Major topics and important personalities are given fairly extended treatment in their regular alphabetical order.

Thus the first longer item, Aboriginals of N. Australia, is given 8 double-column pages. Then, after 101 title entries with references to topics under which the subjects are treated, follows a 12-page article on Thomas Acquinas. Other longer items under A, are Aristotle (9) pp.), Augustine (6 pp.), Aztec morals (4 pp.). If one wants to find out about atheism, the title entry refers, curiously enough, to Spinoza (the "God intoxicated"), (8 pp.). Here we learn of Spinoza's excommunication as a heretic by the Jewish authorities in Amsterdam, and of the storm that broke over his head when he published his "blasphemous," "god-·less" book, A Politico-Political Treatise, wherein he declared "that freedom of thought and speech not only may; without prejudice to piety and the public peace, be granted; but also may not, without danger to piety and the public peace, be withheld." Spinoza's mas-

terwork, The Ethics is also analyzed here.

The last of the longer articles in this book deals, in 7 pages, with the morals of the Zuni Indians of the S. W. United States where the Spaniards found them in the early 16th century and where they still live—an area occupied by American Indians for the past 10,000 years. Ruth Benedict characterized the Zuni as "Apollonian," followers of the middle way—moderation vs. excess; strict ritual vs. mystic ecstasy; compromise vs. competition; community welfare vs. individual exaltation.

Professor Ferm has assembled a vast amount of information in his Encyclopedia which will throw light on almost any subject in human experience in this field. It is an excellent book of reference, exemplifying the Johnsonian definition of morals. By alphabetic accident the book begins and ends with societies called primitive or savage. Between these are discussed the mores of the partially civilized peoples of the world, thus completing the picture of human society to date.

C. B. F.

THE ANATOMY OF THE NERVOUS SYSTEM.

Its Development and Function. 10th ed.
By Stephen Walter Ranson, M.D., Ph.D.
Revised by Sam Lillard Clark, M.D., Ph.D.
(Philadelphia and London: W. B. Saunders Co., 1959, pp. 622. \$9.50.)

Since this textbook first appeared in 1920, it has held its pre-eminent place with students and teachers of neuro-anatomy. The present reviewer welcomes this opportunity of acknowledging his debt to Ranson as the book on which his undergraduate lectures have been based since 1923.

The book has become a little stouter over the years but, under Dr. Clark's skilful guidance, this has been kept within bounds. This edition contains only 41 more pages than the previous 1953 revision.

The chapter on "Meninges and Blood Vessels" has been expanded, mainly by 3 additional pictures, to emphasize the increasing importance of angiography and venography. Six electron micrographs have been added to the chapter "Neurons and Neuroglia." New material is also found in the "Rhinencephalon" and "Cerebral Cortex" chapters.

The quality of both the black and white and the coloured illustrations is improved.

> ERIC A. LINELL, University of Toronto.



GREGORY ZILBOORG

#### IN MEMORIAM

## GREGORY ZILBOORG—A MEMORIAL 1891-1959

Genius, it is said, is intensity and its boon is to make its possessor independent of situations and able to think in large and varied categories. Also, in its turbulent career genius is fated to excite emotional responses in its beholders, among them admiration, usually unexpressed; antipathy, usually openly expressed; envy, disguised; and occassionally loyalty and affection, which, when once called forth, are held deep and lasting. Gregory Zilboorg was of the species genius; he had all of its trappings and he called forth all the responses connected with it. When he died on 17 September, 1959, American psychiatry lost one of its most brilliant, stimulating and colorful figures.

Born in Kiev, Russia, in 1891, his was a veritable story book career. Before he was twenty-five years old, he had served two years in the medical corps of the Czar's army, received a medical degree in St. Petersburg, participated in the Russian revolution of March 1917, become Secretary to the Minister of Labor in the Cabinets of Prince Lvov and Alexander Kerensky, and been dismissed by the Bolsheviks following upon their successful coup in November, 1917. Eventually, like numerous other intellectuals, he was hounded from Russian shores.

Upon his arrival in this country, Zilboorg supported himself by lecturing, writing and translating for the theatre, while he studied medicine for the second time at Columbia University. The medical degree from Columbia was granted in 1926 and he began his psychiatric career as a member of the staff of Bloomingdale, which is now known as The Westchester Division of the New York Hospital. He remained there until 1931, with time out for psychoanalytic studies at the Berlin Psychoanalytic Institute in 1929-30. From 1931 on he was engaged in the private practice of psychoanalysis and psychiatry in New York City.

To list Dr. Zilboorg's contributions to

clinical psychiatry and the honors accorded him is an encompassing task. Among his major works should be mentioned his excellent studies of postpartum psychosis, of suicide, and of that form of chronic schizophrenic reaction which he designated "ambulatory schizophrenia." As testimony to his versatility and his capacity for thinking varied categories, the lectureships awarded him were diverse and numerous. To mention but a few, he was Noguchi lecturer at Johns Hopkins University in 1935, Associate in Psychiatry at Catholic University, 1944-46, Gimbel lecturer at the University of California in 1947, Issac Ray lecturer at Yale University in 1953, and first Academic lecturer at the annual meeting of the American Psychiatric Association in 1957. Interspersed among these were a number of lectures delivered in Paris, London, Madrid and Rome.

In 1935 Zilboorg's book The Medical Man and the Witch During the Renaissance appeared. Six years later his epoch making contribution, The History of Medical Psychology, was published and by means of it his place in the ranks of medical historians became assured. Then, in 1943, the brilliant work, Mind, Medicine and Man, was printed and one year later the Centennial Volume of the American Psychiatric Association, entitled One Hundred Years of American Psychiatry, with Zilboorg as co-editor, took its place among the required readings of psychiatric literature. In 1953, as fruit of his Isaac Ray Lectureship award, his book The Psychology of the Criminal Act and Punishment was published.

In his hospital and teaching career Dr. Zilboorg's appointments and accomplishments were likewise diverse. He taught psychotherapy at Butler Hospital, an institution which he loved and in which he had created the Isaac Ray Library. He held professional rank in several New York medical schools and was Chairman of the Consulting Delegation on Criminology to the

United Nations. One honor which he held in high regard was the degree of Doctor of Science which was awarded him by the University of Dublin in Ireland in 1954.

If it is true that capacity is but an aptitude to receive, then Gregory Zilboorg had a capacity which was infinite, one which sought satisfaction by the mastery of the widest variety of skills. He was a psychiatrist, a psychoanalyst, a criminologist, a medical historian, a linguist, a brilliant lecturer, and a writer of essays on psychological and religious issues. He had a facility for apt expression, an ability as a phrase maker, and a ready humor. Not content with these accomplishments, he became an expert photographer, a craftsman with wood, an excellent cook, and a bibliophile. It is not without reason that Mora spoke of him as a "Renaissance Man."

It is interesting, as Mora also points out, that as he became older his introspective urge seemed to increase and his life became a progressive saga from outward interests (politics, drama) to psychological and social interests (psychoanalysis, criminology and medical history) and thence, in the last few years of his activity, to that most internal of all interests, a profound concern with affairs of the spirit and religious and moral issues. Concomitant with this latter interest, he lectured extensively at Fordham University and Woodstock College in Baltimore and collaborated in the commemorative volume for Pius XII in 1956 and wrote several important papers dealing with religion and psychoanalysis. His volume entitled Freud and Religion was published in 1958.

To see this complicated and brilliant man at his best, one should have seen him with his lovely wife and the young family, of which he was so proud. Or perhaps one might have caught glimpses of him in quiet conversation in out of the way places—in restaurants in Europe, or in some place where the klieg lights were off and the tensions removed. Whereas in the arena of psychiatric meetings he reacted with unbelieving and hurt surprise to those who challenged him, in the situations mentioned above his genius became apparent and a brilliant, warm, understanding and kindly man emerged.

Upon his return from Europe in July, 1959, his condition was diagnosed is inoperable. He knew about it and, with a quiet dignity, he set about to put his affairs in order. He was subdued by the imminence of death, but there were no complaints and no lamentations. This writer sat with him as his end approached and was moved by the clarity of his thought as he discussed various philosophical problems and recounted how he, in his "rebellious Dostoyevskian fashion," finally arrived at his deep spiritual convictions. His last psychiatric concern was an admonition regarding the protection of psychologic test records of students from improper hands, for the student might later become the president of the university. Thus, this genius which found its own road and carried its own lamp through a turbulent career died serene and with a concern for the dignity of the individual and his right to privacy.

Francis J. Braceland, M.D.

# To control agitation—a symptom that cuts across diagnostic categories



## Thorazine®, a fundamental drug in

brand of chlorpromazine

psychiatry—Because of its sedative effect, 'Thorazine' is especially useful in controlling hyperactivity, irritability and hostility. And because 'Thorazine' calms without clouding consciousness, the patient on 'Thorazine' usually becomes more sociable and more ... receptive to psychotherapy.

leaders in psychopharmaceutical research

SMITH KLINE & FRENCH

## COMPREHENSIVE, THREE-LEVEL TREATMENT OF DEPRESSION:

AND ASSOCIATED ANXIETY AND PHYSICAL TENSION

RELIEVES DEPRESSION including symptoms such as crying, lethargy, loss of appetite, insomnia

RELIEVES ASSOCIATED ANXIETY with no risk of drug-induced depression

RELIEVES ASSOCIATED PHYSICAL TENSION by relaxing skeletal muscle

hypothalamus

thalamus and limbic system

spinal cord

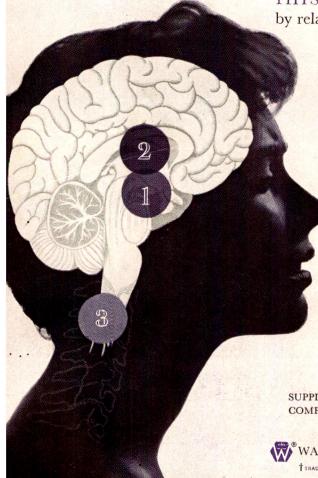
## eprol

benactyzine + meprobamate

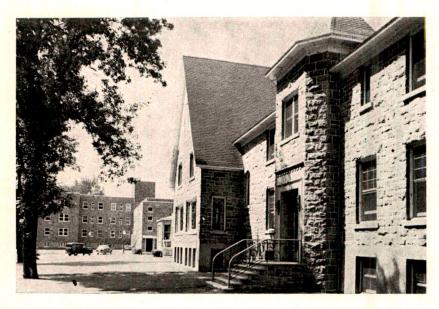
- confirmed efficacy
- documented safety

SUPPLIED: Bottles of 50 light-pink, scored tablets COMPOSITION: Each tablet contains 1 mg. benactyzine HCl and 400 mg. meprobamate





## A Modern Psychiatric Institution in Montreal, Canada



- A non-profit voluntary institution, for the study, care and treatment of emotional, mental, personality and habit disorders.
- On a foundation of dynamic psychotherapy, all other therapies are used as indicated.
- Fully accredited for the undergraduate training of residents, psychologists, social workers and nurses.
- Adequate supervision of the treatments program and therapeutic team by the psychiatrist in chief.

## CHARLOTTE TASSE, R.N. BERNADETTE LÉPINE R.N.

President & Vice-President of the Board of Directors.

#### CAMILLE LAURIN, M.D.

Scientific Director.

Member of the "Société Française de Psychanalyse." Certified in Psychiatry from the College of Physicians and Surgeons of the Province of Quebec.

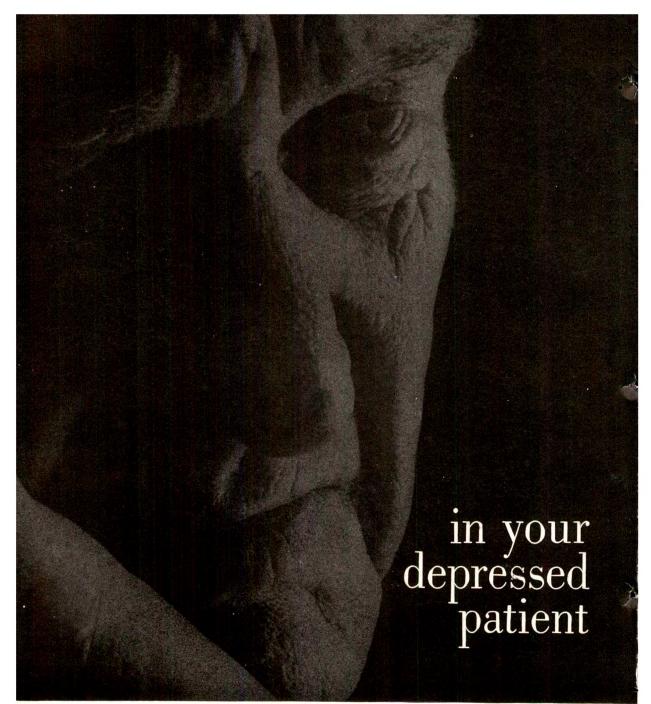
Brochures and rates sent on request.



6555 Gouin Blvd. West, Montreal, P.Q. Phone FE 4-2440

## NEURO-PSYCHIATRIC CENTER

ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS -



# remove the depression with new a true antidepressant

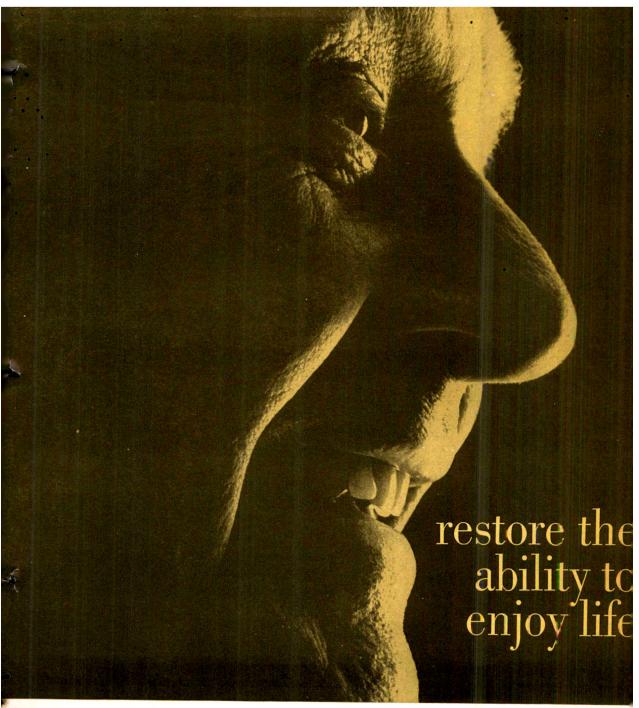
brand of phenelzine dihydrogen sulfate

rapidly effective—antidepressant response often within a few days; complete remission usually within 2 to 6 weeks, in 4 out of 5 patients.<sup>1-10</sup>

low toxicity—no significant reports of toxicity to liver, blood or kidneys. 1-10

corrective—helps remove the depression, rather than merely masking the symptoms... restores the mild-to-deeply depressed patient without institutionalization and without recourse to ECT in most cases.<sup>1-10</sup>

simple dosage-1 tablet 3 times a day



INDICATIONS: Mild to severe depressions, depressions associated with chronic diseases such as angina pectoris and rheumatoid arthritis. Improves the depressed phase of affective (manic-depressive) psychosis, and relieves the depression of catatonic schizophrenics, although not affecting the psychosis per se. SIDE EFFECTS: Occasional postural hypotension and infrequent nausea, ankle edema, delayed micturition or constipation are managed by appropriate adjunctive therapy, or dosage reduction. DOSAGE: One tablet three times a day. After remission, reduce to a maintenance level of 1 or 2 tablets a day. SUPPLIED: Orange-coated tablets, each containing 15 mg. of phenylethylhydrazine pres-

ent as the dihydrogen sulfate. Bottles of 100. CAUTION Nardil should be withheld or used with extreme cau tion where the patient has a history of liver disease of liver damage is present. Hypotensive patients should be under close medical supervision.

REFERENCES: 1. Sainz, A.: Ann. New York Acad. Sc. 20:780, Art. 3 (Sept 17) 1959. 2. Thal, N.: Dis. Nerv. System 26:197 (May, Pt. 1) 1959

3. Saunders, J. C., Kline, N. S., et al.: Am. J. Psychiat. 116:71, 1959. 4. Arnow, L. E.: Clinical Med. 5:1573, 1959. 5. Dickel, H. A., et al.: Clinical Med. 5:1579, 1959. 6. Dunlop, E.: Rhode Island, M. J. 42:656, 1959. 7. Sainz, A.: Dis. Nerv. System 20:537, 1959. B. Sarwer-Foner, G. J., et al.: Canad. M.A.J. (in press) 1959. 9. Hobbs, L. F.: West Virginia M. J. (in press) 1959. 10. Dunlop, E.: Dis. Nerv. System (in press) 1959. MORRIS PLAINS, N



New agent for parkinsonism



# Akineton®

brand of biperiden

#### PARKINSON'S DISEASE

postencephalitic — idiopathic — arteriosclerotic

## DRUG-INDUCED EXTRAPYRAMIDAL DISORDERS

parkinsonism — dyskinesia — akathisia

## MUSCULAR SPASTICITY NOT RELATED TO PARKINSONISM

ACTION

Frequently diminshes akinesia, rigidity, and tremor with subsequent improvement in coordinated movement, gait, and posture. Masklike face disappears. Salivation and oily skin are decreased. Oculogyric crises are often lessened in intensity and frequency.

SIDE EFFECTS

Minimum (mainly dry mouth or blurred vision).

DOSAGE

Individual adjustment of dosage is necessary in all instances. Dose range extends from 2 mg. to 24 mg. daily, in divided doses.

AVAILABLE

Supplied as the hydrochloride salt, 2 mg. bisected tablets, bottles of  $100\ \mathrm{and}\ 1000.$ 

Complete information furnished upon request.

KNOLL PHARMACEUTICAL COMPANY

ORANGE

(formerly Bilhuber-Knoll Corp.)

## DREAMS AND PERSONALITY DYNAMICS

edited by Manfred F. DeMartino, Board of Cooperative Educational Services, Onondaga County, New York. This unique volume, which represents a new milestone in the field of dynamic psychology, encompasses a wide variety of aspects of the exciting and immensely important subject of nocturnal dreams. Nineteen well-known investigators deal with such topics as the history of dream interpretation and theory, sex differences in dream content, nocturnal sex dreams, children's dreams, typical anxiety dreams, etc. Publication date January 1960

## RESEARCH CONFERENCE ON THERAPEUTIC COMMUNITY

edited by Herman C. B. Denber, Manhattan State Hospital, Ward's Island, New York City. This multiphasic study will long serve as a guide to psychiatrists and those in related fields who wish to set up a therapeutic community. The discussion covers historical background, analysis of hospital structure, relations of administration to staff, staff to patients, and staff to staff. Includes practical guidance on every phase of the enlightened operation known as a therapeutic community. Publication date February 1960

#### CLINICAL MEDICINE AND THE PSYCHOTIC PATIENT

by Otto F. Ehrentheil and Walter E. Marchand, both of Veterans Administration Hospital. Bedford, Massachusetts. In an informal, narrative style the authors discuss the many problems encountered in the practice of medicine with psychotic patients and give practical recommendations for their solution. By recognizing that the symptoms and manifestations of organic disease in the psychotic patient may and often do differ strikingly from those seen in general practice, Doctors Ehrentheil and Marchand have made a real contribution. Publication date April

## A PHARMACOLOGIC APPROACH TO THE STUDY OF THE MIND

edited by Robert M. Featherstone and Alexander Simon, both of the University of California School of Medicine, San Francisco. "Faculty" for this unique symposium included forty basic medical scientists, psychiatrists, and physicians from medical centers throughout the United States. Following a general discussion, these world authorities summarize and present new data on compounds that have popularly been called hallucinogenic compounds, tranquilizers, and psychic energizers. Publication date December 1959

## 7

## NEW BOOKS

for Psychiatrists

## PSYCHOANALYTIC CONCEPTS OF DEPRESSION

by Myer Mendelson, University of Pennsylvania School of Medicine, Philadelphia. Doctor Mendelson's book represents the first survey comprehensive enough to place recent developments in theory in proper perspective. He examines critically the evolution and present status of the psychoanalytic concepts of depression. In a final chapter the author reflects on the scientific workmanship of the body of psychoanalytic literature both from the point of view of its accomplishments and its failings. Publication date May 1960

#### THE DYNAMICS OF PSYCHIATRIC DRUG THERAPY

edited by G. J. Sarwer-Foner, McGill University Faculty of Medicine, Montreal. A conference on physiological, psychodynamic, psychoanalytic, and sociological aspects of the neuroleptic drugs in psychiatry. Five committee-units of experts present well-prepared work papers in specific areas of psychiatric drug therapy. Reflects the freshest knowledge and thought available on this dynamic subject. Publication date January 1960

#### A HISTORY OF PSYCHIATRY

by Jerome M. Schneck, State University of New York, College of Medicine. Would you like to renew acquaintance with fascinating backgrounds of psychiatric endeavor? From primitive societies and archaic medicine right up to the present day? A special feature is the selection of new historical researches, opinions, and interpretations from recent articles in professional journals and their integration into discussions of major historical trends and achievements. Publication date February 1960

#### CHARLES C THOMAS . PUBLISHER

301-327 East Lawrence Avenue
Springfield • Illinois



controls the acute psychotic episode

# elicits continuing cooperation

promotes accessibility

LITERATURE SUPPLIED ON REQUEST

## Sparine

HYDROCHLORIDE

Promazine Hydrochloride, Wyeth
INJECTION TABLETS SYRUP

References: 1. Frain, M.K.: J. Nerv. & Ment. Dis. 125:529 (Oct.-Dec.) 1957. 2. Graffeo, A.J.: New York State J. Med. 58:2056 (June 15) 1959. 3. Lesse, S.: Am. J. Psychiat. 113:984 (May) 1957.

Wyeth Laboratories, Philadelphia 1, Pa.



A Century of Service to Medicine

## **NEW AND EXCLUSIVE**

# FOR SUSTAINED TRANQUILIZATION

MILTOWN (meprobamate) now available in 400 mg. continuous release capsules as

Meprospan-400



## Meprospan-400

MILTOWN® continuous release capsules

## HIGHER POTENCY FOR GREATER CONVENIENCE

- relieves both mental and muscular tension without causing depression
- does not affect autonomic function
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast,

one capsule with evening meal

Available: Meprospan-400, each blue

capsule contains 400 mg. Miltown (meprobamate) Meprospan-200, each yellow capsule contains 200 mg. Miltown (meprobamate) Both potencies in bottles of 30.

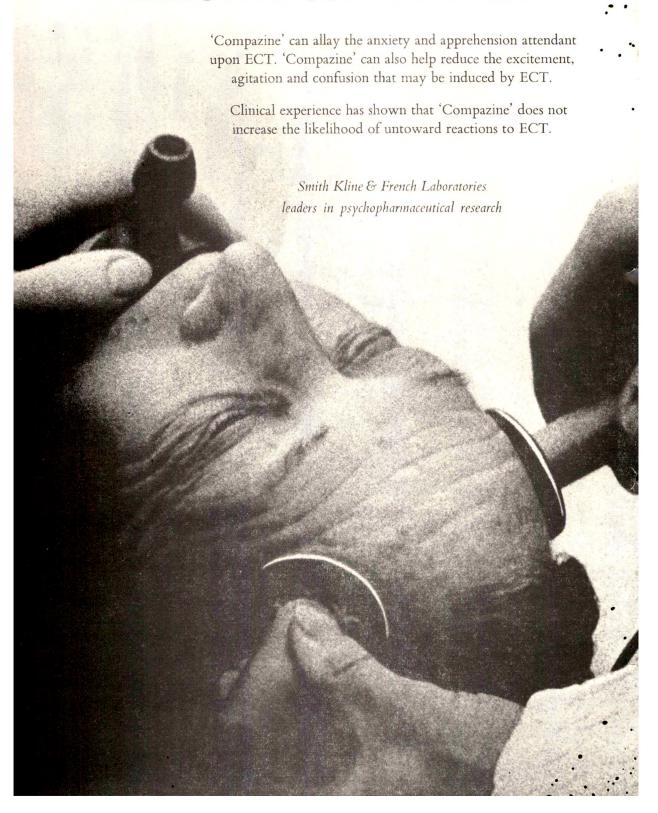
WALLACE LABORATORIES, New Brunswick, N. J.

CME-8429



brand of prochlorperazine

## EFFECTIVE COMBINATION





A significant contribution to contemporary psychology . . .

## LEARNING THEORY and BEHAVIOR

By O. HOBART MOWRER, Professor of Psychology, University of Illinois

## From the Preface . . .

"Even some professional psychologists would agree with an opinion recently expressed to the effect that 'all this work on learning is a maze of crucial experiments, none of which is ever quite confirmed and any one of which almost certainly has been contradicted'.

"If, however, one takes a sufficiently long view of the field, movement of an unmistakable and meaningful kind is apparent. It is the purpose of this book to trace and interpret this movement."

## Offers an historical and logical synthesis of the field . . .

In this book, Professor Mowrer has combined recent experimental findings with the valid parts of earlier theories of learning so as to evolve a new, unified conceptual scheme of greater scope and power than any which has previously appeared. This work, not only provides the reader with an understanding of the historical dimension of the field, it also presents him with an important new theoretical framework which will doubtless have a significant effect on the future development of modern psychology in general and the psychology of learning in particular. Moreover, in view of the importance which re-education and re-learning have assumed in psychotherapy and the hospital treatment of emotionally disturbed persons, it is apparent that the new conception of learning which Professor Mowrer presents in this book can readily and meaningfully be related to clinical problems and practice.

1960.

Approx. 520 pages.

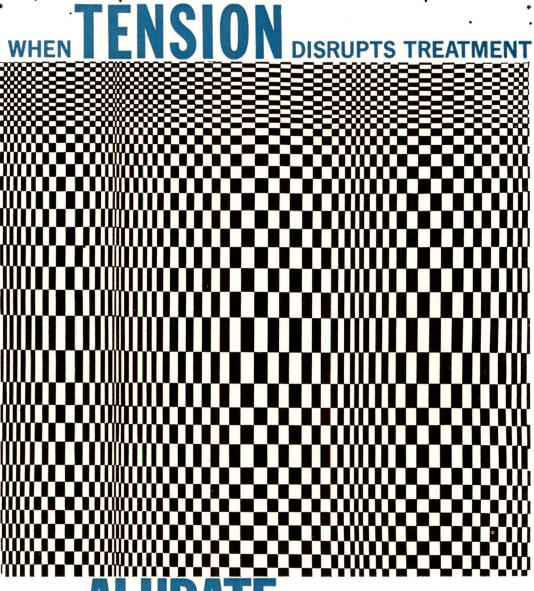
Prob. \$5.75

Send for an examination copy today.

JOHN WILEY & SONS, Inc.

440 FOURTH AVENUE

NEW YORK 16, N. Y.



## ELIXIR ALURATE DISRUPTS TENSION

Dependable, prompt-acting daytime sedative.

Broad margin of safety. Virtually no drowsiness. Over a quarter century of successful clinical use. Alurate is effective by itself and compatible with a wide range of other drugs. To avoid barbiturate identification or abuse, Alurate is available as Elixir Alurate (cherry-red) and Elixir Alurate Verdum (emerald-green).

- Adults: 1/2 to 1 teaspoonful of either Elixir Alurate or Elixir Alurate Verdum, 3 times daily. ALURATE®-brand of aprobarbital.

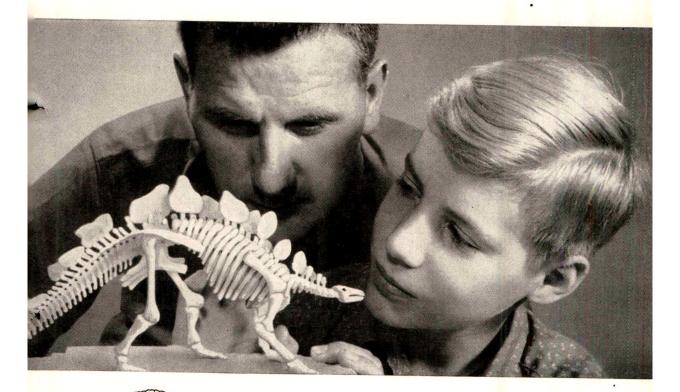
ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N. J.

To facilitate psychotherapy in the emotionally disturbed child, and to enable him to lead a stable life during such therapy, adjunctive treatment with Prozine is often advantageous. In reporting on 176 disturbed children who received Prozine, Ehrmantraut et al. found that 85.8 per cent showed moderate to marked improvement in behavior reactions and adjustment to institutional care.

Prozine, designed for the treatment of moderate to severe emotional disturbances, helps control psychomotor agitation as well as anxiety and tension.

1. Ehrmantraut, W., et al.: Scientific Exhibit Presented at the District of Columbia Medical Society Meeting, Nov. 24, 1958, Washington, D.C.

## controlled: an acute behavioral problem





SPECIFIC CONTROL THROUGH DUAL ACTION



# New 34% interest

# on U.S. Savings Bonds

The Treasury explains why the new ones you buy and the ones you own now are better than ever

- Q: How does the new 33/4% interest rate benefit me?
- A: With Series E Bonds, this rate turns \$18.75 into \$25.00 fourteen months faster than before. Your savings increase faster, because your Bonds mature in 7 years, 9 months.

With Series H Bonds, the 10-year maturity period stays the same but more interest is paid you each six months. With both E and H Bonds the new rate works out to  $2\frac{1}{2}\%$  for the first year and a half; then a guaranteed 4% each year to maturity.

- Q: When did new rate go into effect?
- A: June 1, 1959.
- Q: Does the new rate change the Bonds I bought before June 1, 1959?
- A: All older E and H Bonds pay more now—an extra ½% from now on, when held to maturity. The increase takes effect in the first full interest period after June 1.

- Q: When my E Bonds mature, will they keep on earning interest?
- A: Yes. An automatic 10-year extension privilege went into effect along with the new interest rate. This means your E Bonds will automatically keep earning interest after maturity.
- Q: With the new interest rate, should I cash my old Bonds to buy new ones?
- A: No. The automatic ½% increase makes it unnecessary—and in almost every case it is to your advantage to retain your present Bonds.
- Q: How safe are U.S. Savings Bonds?
- A: Savings Bonds are an absolutely riskless way to save. The United States Government guarantees the cash value of your Bonds will not drop, that it can only grow.
- Q: What if my Bonds should be lost, stolen or destroyed?
- **A:** If anything happens to your Bonds they are replaced—free.

YOU SAVE MORE THAN MONEY WITH

## U.S. SAVINGS BONDS

The U.S. Government does not pay for this advertising. The Treasury Department thanks The Advertising Council and this magazine for their patriotic donation.



# once a day dosage for the psychiatric patient



Prolixin is a new, exceptionally effective behavior modifier with sustained and prolonged action for your psychiatric patients. Its extended action, permitting a single daily dose, has been thoroughly demonstrated in clinical trials.<sup>1,2</sup>

Prolixin is particularly useful in the management of acute and chronic psychotic states characterized by agitation, excitement, explosive behavior and turbulence — in such conditions as schizophrenia, mania, psychoses due to organic brain disease, and senile psychoses.

Providing lowered toxicity and maximum economy, Prolixin not only elicits a greater therapeutic response but also affords improvement in many patients previously refractory to other phenothiazines. This is true whether the mental disorder is of short or long duration.

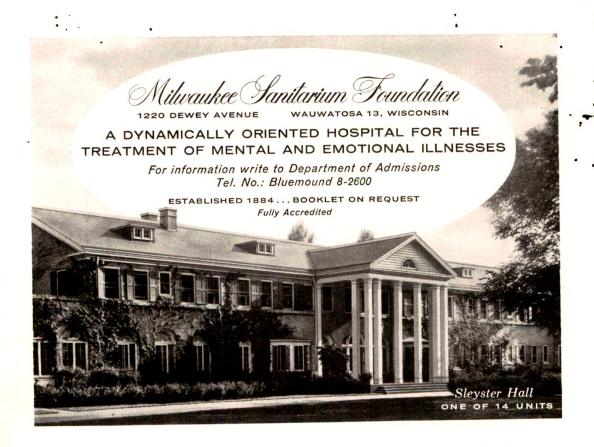
The usual extrapyramidal symptoms encountered with other potent phenothiazine derivatives have been reported. Less common effects have been hypotension, drowsiness, agitation, restlessness, and anorexia. Side effects have disappeared with reduced dosage or temporary discontinuance of the drug. Less common effects have disappeared with

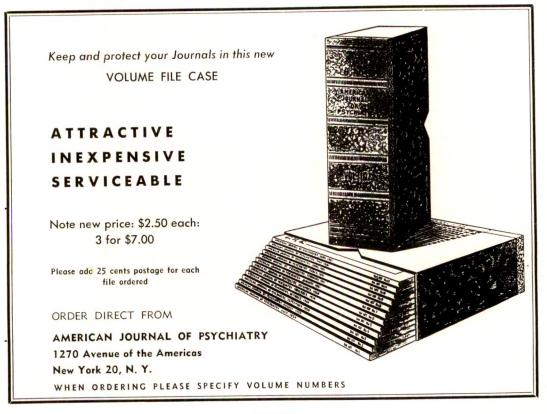
Dosage: Optimum dosage levels vary from patient to patient and must be determined individually. Most patients may be maintained on 1 mg. – 5 mg. daily, Supply: 1.0 mg., 2.5 mg., and 5 mg. tablets. References: 1. Taylor, I.J.: Clin. Res. Notes 2:1 (Aug.) 1959. 2. Morrow, L.L.: Clin. Res. Notes 2:8 (Aug.) 1959. 3. Darling, H.F.: Dis. Nerv. System 20:167 (April) 1959. 4. Niswander, G.D., and Karacan, I.: Dis. Nerv. System (In Press). 5. Freed, J.E.: Clin. Res. Notes 2:12 (Aug.) 1959. 6. Weiss, I.I.: Clin. Res. Notes 2:12 (Aug.) 1959. 7. Stevenson, L.E.: Clin. Res. Notes 2:10 (Aug.) 1959.



## **SQUIBB**

Squibb Quality the Priceless Ingredient

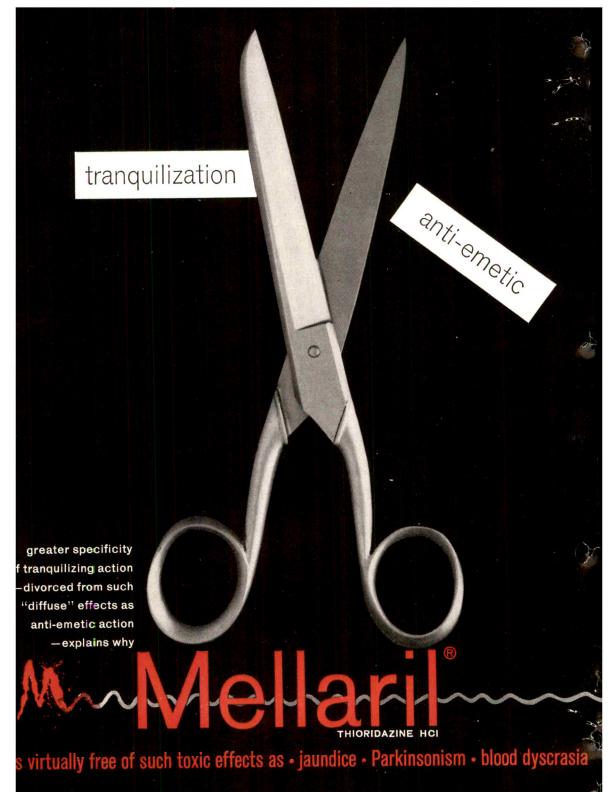




The patient who responds best to your skill is the patient in whom anxiety and tension don't interfere with your treatment.

EQUANIL® meprobamate



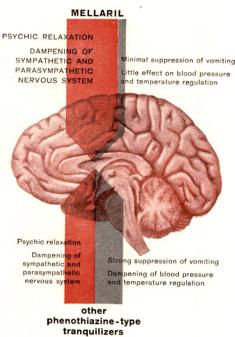


'Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines....This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."\*

## a new advance in tranquilization: greater specificity of tranquilizing action results in fewer side effects

The presence of a thiomethyl radical (S-CH<sub>3</sub>) is unique in Mellaril and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

1 A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.





- 2 Less "spill-over" action to other brain areas hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.
- 3 A notable absence of extrapyramidal stimulation.
- 4 Lack of impairment of patient's normal drive and energy.
- Virtual freedom from such toxic effects as jaundice, photosensitivity, skin eruptions, blood forming disorders.

Indication	Usual Starting Dose	Total Daily Dosage Range
ADULTS: Mental and Emotional Disturbances:  MILD—where anxiety, apprehension and tension are present  MODERATE—where agitation exists in psychoneuroses, alcoholism, intractable pain, senility, etc.  SEVERE—in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:	10 mg. t.i.d. 25 mg. t.i.d.	20-60 mg. 50-200 mg.
Ambulatory Hospitalized	100 mg. t.i.d. 100 mg. t.i.d.	200 - 400 mg. 200 - 800 mg.
CHILDREN: BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

Mellaril Tablets, 10 mg., 25 mg., 100 mg.





# Tofranil a thymoleptic brand of imipramine HCI

Specific in Depression

## does

Produce remission or improvement in 70-85% of cases

Act effectively in all types of depression

Afford equally good results in severe as in mild cases

Achieve therapeutic benefit with minimal risk of serious side reaction

Indications for Tofranil include:

Endogenous Depression, Reactive Depression, Involutional Melancholia, Senile Depression, Depression associated with other Psychiatric Disorders.

Availability: Tofrānil (brand of imipramine HCl) tablets of 25 mg. bottles of 100. Ampuls of 25 mg. (for intramuscular administration only) cartons of 10 and 50.

## ....not a MAO inhibitor

## does not

Inhibit monoamine oxidase either in brain or liver with its associated risks

Produce dangerous potentiation of other drugs such as barbiturates and alcohol

Act by producing undesirable central nervous stimulation leading to agitation and excitement

Cause disturbance of color vision

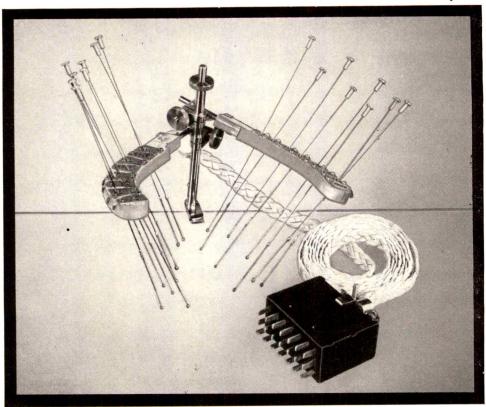
The efficacy of Tofrānil is attested by more than 50 published reports and confirmed by clinical experience in more than 50,000 cases.

Detailed Literature Available on Request.



(Piny Geigy, Ardsley, New York





## FOR FLEXIBLE INSTRUMENTATION IN CORTICOGRAPHY

Write for descriptive literature and prices on:
ELECTROMYOGRAPHS
ELECTROENCEPHALOGRAPHS
STRAIN GAGE AMPLIFIERS
RECORDER PAPER
ELECTRODES
SHOCK THERAPY EQUIPMENT

- Completely universal and extendable arms and electrodes
- Up to 20 electrodes
- Easily removable individual electrode assemblies
- Fully autoclavable
- Spring mounted spherical silver electrodes

## MEDCRAFT ELECTRONIC CORP.



designers and manufacturers of diagnostic and therapeutic equipment for the medical profession

426 GREAT EAST NECK ROAD, BABYLON, N.Y.

TEL. MOHAWK 9-2837

ADDRESS MAIL TO BOX 1006, BABYLON, N.Y.

## Announcing

## THE 1960 - LIST OF FELLOWS AND MEMBERS OF THE AMERICAN PSYCHIATRIC ASSOCIATION

WILL BE AVAILABLE IN FEBRUARY, 1960

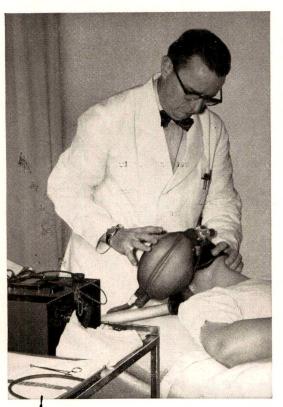
Orders accepted now . . . Please enclose check with your order to facilitate prompt handling.

\$2.00 — for Members of the Association

\$3.00 — for Non-Members (order subject to approval)

## Order from:

American Psychiatric Association 1270 Avenue of the Americas, Rm. 1817 New York 20, New York



for the breath
of life in
electroshock therapy
...the AMBU\*
resuscitation and
suction kit

- Hand operated Resuscitator for safe, efficient ventilation—with room air or oxygen
- Foot operated suction pump for safe aspiration of the airway
- No electricity required

Write for descriptive folder to Air-Shields, Inc., Hatboro, Pa.

AIR-SHIELDS, INC.

Hatboro, Pa.

\*Trademark



John Dollard and Frank Auld, Jr.

## SCORING HUMAN MOTIVES

A Manual

Two noted psychologists present a method for studying the psychotherapeutic process, designed to measure growth, change, and progression with the patient and the evolution of the relationship between patient and therapist. This manual gives instructions for coding each "unit" (usually a sentence) of a psychotherapeutic interview, ascribing to each unit the conscious or unconscious motivation behind it.

Sound recordings from actual cases have been transcribed, enabling the reader to trace for himself the series of steps from raw data through scoring. Hundreds of illustrations of the scoring are given in the instructions, and there are two complete interviews for practice scoring.

This remarkable book makes accessible for scientific analysis what was once a matter of untested opinion. \$9.50

Yale University Press New Haven, Connecticut

# DIAGNOSIS • TRAINING • TREATMENT for the Mentally Retarded Child

## SIX COMPREHENSIVE PROGRAMS:

- Observation and Diagnosis
- Education and Training
- Residential Supervision

- Custodial Care
- Summer Program
- Psychiatric Treatment Center

The Training School at Vineland, New Jersey is a private non-profit residential center for the care and treatment of mentally retarded boys and girls two years and older with a mental potential of six years. Outstanding professional staff conducts electroencephalographic, and neurological examinations; individual psychiatric, physiological, and speech studies and therapies.

Self-help is stressed. The children are given formal classroom instruction and encouraged to develop practical habits, attitudes and work skills. The educational program aims at maximum development.

The children enjoy homelike surroundings in attractive cottages on a 1600-acre country estate. Facilities include a private hospital, school, lake, swimming pools and a working farm. The Training School Research Laboratory is famed for continuous study of causes, prevention and treatment of mental retardation. Established 1888. Full information will be furnished on request. Write: Registrar, Box N.



## THE TRAINING SCHOOL AT VINELAND, NEW JERSEY

# The Bus Headed South Leaves at 8:50 Tonight

In its baggage compartment is a locked pouch which will arrive in New York at 4:30 tomorrow morning. Allied Messenger Service will pick-up the pouch at 7:30 and deliver all of its contents by 9:30.

Page proofs, advertising proofs, and galley proofs will be in the hands of thirteen publishers and editors at the start of the working day. Advance advertising copies of magazines, and cuts to be returned by the printer, reach production departments earlier if necessary.

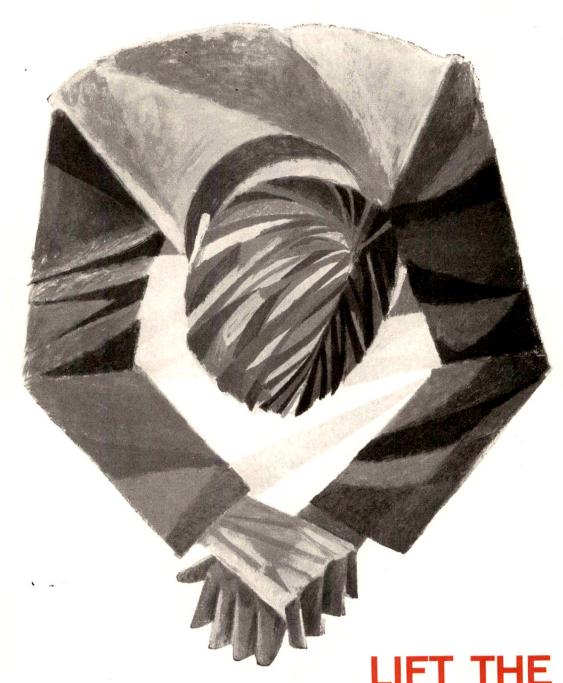
This daily cycle will begin again at 4:30 the same afternoon when the messenger service will pick-up dummy pages, original copy, and engravings.

The trip north will be aboard the train which arrives in White River Junction, Vermont at 7 o'clock the next morning. The printer will handle most of the material received and return it aboard that 8:50 bus tonight: '

Dartmouth Printing Company Hanover, New Hampshire



Pioneering A Planned Printed Package For Trade Publications



LIFT THE DEPRESSION

XLIV

Lift the depression with Marplan. Therapeutically, Marplan is a new, more active amine oxidase regulator. Clinically, it is safer. Medically, it represents a major breakthrough in the chemotherapy of depression. Marplan has been evaluated by some 300 investigators who reported its use in more than 4000 patients. Results have been impressive—frequently dramatic, and side effects have been markedly fewer and less severe. Indications range from moderate to severe psychiatric disorders with associated symptoms of depression, withdrawal or regression. Marplan is also valuable as an adjunct in psychotherapy to facilitate the patient's responsiveness. *Complete literature* giving dosage, side effects and precautions is available upon request and should be consulted before prescribing.

Supplied: 10-mg tablets in bottles of 100 and 1000.

Bibliography: 1. H. F. Darling, W. Kruse, G. F. Hess and M. G. Hoermann, Dis. Nerv. System, 20:269, 1959. 2. W. B. Abrams, A. Bernstein, V. D. Mattia, Jr., R. J. Floody and L. O. Randall, Scientific Exhibit, American Medical Association Meeting, Atlantic City, N. J., June 8-12, 1959. 3. Reports on file in the Department of Pharmacology, Roche Laboratories. 4. Clinical reports on file, Roche Laboratories. 5. L. O. Randall and R. E. Bagdon, Dis. Nerv. System, 19:539, 1958. 6. W. Hollander and R. W. Wilkinson, in J. H. Moyer, Ed., Hypertension, Philadelphia, W. B. Saunders Co., 1959, p. 399. 7. R. W. Oblath, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 8. I. Kimbell, paper read at Cooperative Chemotherapy Studies in Psychiatry, 4th Annual Research Conference, Memphis, Tenn., May 20-22, 1959. 9. L. Alexander and S. R. Lipsett, Dis. Nerv. System, 20 (Suppl.):26, 1959. 10. A. L. Scherbel and J. W. Harrison, Ann. New York Acad. Sc., 80:(3), 820, Sept. 17, 1959. 11. S. L. Cole, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 12. L. O. Randall and R. E. Bagdon, Second Marsilid Symposium, Chicago, Ill., May 8, 1958. 13. O. Resnick, Ann. New York Acad. Sc., 80:(3), 726, Sept. 17, 1959. 14. G. Zbinden and A. Studer, ibid., p. 873. 15. T. R. Robie, Dis. Nerv. System, 20:182, 1959.

MARPLAN 1.M. - 1-benzyl-2-(5-methyl-3-isoxazolylcarbonyl)hydrazine

ROCHE®



Phone:

#### WINDSOR HOSPITAL

A Non Profit Corporation

Established 1898

CHestnut 7-7346

CHAGRIN FALLS, OHIO

A hospital for the treatment of Psychiatric Disorders. Booklet available on request.

JOHN H. NICHOLS, M. D.

G. PAULINE WELLS, R. N.

HERBERT A. SIHLER, JR.

Medical Director

Administrative Director

Secretary

MEMBER: American Hospital Association - Central Neuropsychiatric Hospital Association - National Association of Private Psychiatric Hospitals

Accredited: by the Joint Commission on Accreditation of Hospitals

#### CHESTNUT LODGE

DEXTER M. BULLARD, M.D., Medical Director MARVIN L. ADLAND, M.D., Clinical Director OTTO A. WILL, JR., M.D., Director of Psychotherapy DONALD L. BURNHAM, M.D., Director of Research

#### CLINICAL ADMINISTRATORS

MARTIN COOPERMAN, M.D.

JOHN L. CAMERON, M.D. JOHN P. FORT, JR., M.D.

ROBERT W. GIBSON, M.D. MICHAEL A. WOODBURY, M.D.

#### ASSOCIATES

CHARLES A. BAKER, M.D. CLAY F. BARRITT, M.D. MILTON G. HENDLICH, M.D. JOHN S. KAFKA, M.D. BERL D. MENDEL, M.D. CESAR MEZA, M.D. PING-NIE PAO, M.D.

CLARENCE G. SCHULZ, M.D. HAROLD F. SEARLES, M.D. JOSEPH H. SMITH, M.D. BARBARA S. SOKOLOFF, M.D. WILHELM P. STIERLIN, M.D. YVONNE VAN der REYDEN, M.D. NAOMI K. WENNER, M.D.

#### CLINICAL PSYCHOLOGIST MARION I. HANDLON, Ph.D.

#### **INTERNISTS**

CORINNE COOPER, M.D.

GEORGE SHARPE, M.D.

#### ROCKVILLE

#### **MARYLAND**

ENTER NEW SUBSCRIPTIONS AND RENEWALS ON THIS FORM
AMERICAN JOURNAL OF PSYCHIATRY 1270 AVENUE OF THE AMERICAS, ROOM 1817 New York 20, New York  19 Date
Enclosed herewith is \$ for one year's subscription to the AMERICAN JOURNAL OF PSYCHIATRY beginning with Volume Number
NAME Print
ADDRESS
- July 1/// 100mc.





Roger E. Phillips, M.D.

## on the Gulf of Mexico

#### A MODERN HOSPITAL FOR INTENSIVE PSYCHIATRIC TREATMENT

Owned and Operated by The Anclote Manor Foundation—A Non-Profit Organization SAMUEL G. HIBBS, M.D. - PRESIDENT

Dynamically Oriented For: Individual Psychotherapy, Group Psychotherapy, Therapeutic Community, All Somatic Therapies • Large Staff Trained for Team Approach • Supervised Recreational Program

Medical Director

Lorant Forizs, M.D.

Clinical Director Walter H. Wellborn, Jr., M.D.

Director of Training Peter J. Spoto, M.D. Consultants in Psychiatry Arturo Gonzalez, M.D.

Samuel G. Hibbs, M.D. Samuel Warson, M.D. Zack Russ, M.D.

Melvin Gardner, M.D. Walter Bailey, M.D. Martha McDonald, M.D.

Robert Steele, M.D.

#### TARPON SPRINGS, FLORIDA • VICTOR 2-1811

Approved by American Psychiatric Assn., Accredited by Joint Commission on Accreditation of Hospitals Member National Assn. of Private Psychiatric Hospitals, American Hospital Assn., Florida Hospital Assn.



#### HALL-BROOKE HOSPITAL

An Active Treatment Hospital, located one hour from New York

Accredited by: The Central Inspection Board of the American Psychiatric Association The Joint Commission on Accreditation of Hospitals

#### HALL-BROOKE, GREENS FARMS, BOX 31, CONN.

Telephone: WESTPORT CAPITAL 7-1251

George S. Hughes, M.D. Leo H. Berman, M.D. Albert M. Moss, M.D.

Louis J. Micheels, M.D.

Robert Isenman, M.D. John D. Marshall, Jr., M.D. Edward M. Keelan, M.D. Peter P. Barbara, Ph.D.

#### THE · BRETT SCHOOL

#### DINGMANS FERRY, PENNSYLVANIA

In the Foothills of the Poconos

Intensive, highly individualized personal training for a small group of girls over five years of age. Carefully chosen staff. Special modern teaching techniques and program of therapeutic education. Varied handicrafts, cooking, nature study and field trips. Outdoor games, picnics and other activities. Comfortable, homelike atmosphere. Close cooperation with family physician. 70 miles from New York City.



Directors Frances M. King, formerly Director of the Seguin School References
Catherine Allen Brett, M.A. Telephone Dingmans Ferry 8138

## THE BROWN SCHOOLS

#### FOR EXCEPTIONAL CHILDREN

The Brown Schools, in operation since 1940, has facilities for the private residential treatment of emotionally disturbed children and for the education of retarded children of all ages.

Specialists on our staff in psychiatry, psychology, medicine, social work, speech pathology and special education assure a well-rounded approach to the problem of the exceptional child.

Seven different suburban and ranch units make possible the placement of each child in a group best suited to his interests, age, ability, development and social adjustment.

We have recently prepared a comprehensive view book for your use in learning more about our schools and the services we offer. We invite you to write for a copy and also for any particular information you desire.

#### Please write:

Mrs. Nova Lee Dearing, Registrar P. O. Box 4008 D

Austin, Texas

#### ATTENTION

Extension of the reduced subscription rate of \$5.00 (less than one-half the regular rate) for the AMERICAN JOURNAL OF PSY-CHIATRY has been authorized to include medical students; junior and senior internes; first, second, and third year residents in training; and graduate students in psychology, psychiatric nursing, and psychiatric social work.

In placing your order, please indicate issue with which subscription is to start.

Send subscriptions to:

THE AMERICAN JOURNAL OF PSYCHIATRY

1270 Avenue of the Americas New York 20, New York

#### SAMILAKIUMS and PKIVALE HUSPITALS

#### BALDPATE, INC.

Geo. Fleetwood 2-2131

Georgetown, Mass.

Located in the hills of Essex County, 30 miles north of Boston

For the treatment of

psychoneuroses, personality disorders, psychoses, alcoholism and drug addiction.

Definitive psychotherapy, somatic therapies, pharmacotherapy, milieu-therapy under direction of trained occupational and recreational therapists.

HARRY C. SOLOMON, M.D. Consulting Psychiatrist

GEORGE M. SCHLOMER, M.D. Medical Director

#### THE EMORY JOHN BRADY HOSPITAL 401 SOUTHGATE ROAD, COLORADO SPRINGS, COLORADO

For the care and treatment of Psychiatric disorders.

Individual and Group Psychotherapy and Somatic Therapies. Occupational, diversional and outdoor activities.

X-ray, Clinical Laboratory and Electroencephalography.

E. JAMES BRADY, M. D., Medical Director C. F. RICE, Superintendent

Francis A. O'Donnell, M. D. ROBERT W. DAVIS, M. D.

RICHARD L. CONDE, M. D. H. C. Hobbs, Ph. D. Clinical Psychology

#### BRIGHAM HALL HOSPITAL CANANDAIGUA, NEW YORK

FOUNDED 1855

Individual psychotherapy, occupational and recreational programs, shock therapy, selected cases of alcoholism and addiction accepted.

> Special consideration for Geriatric cases. HOWARD W. BERG, M.D., Medical Director

#### CEDARCROFT SANITARIUM & HOSPITAL, INC. 12,101 COLUMBIA PIKE, SILVER SPRING, MD.

MAfair 2-1200

Nine miles from Washington, D. C. - In rural Maryland

Dedicated to the Care of neuropsychiatric disorders requiring special supervision and guidance. Individual and group psychotherapy, occupational and activity therapy emphasized. All other accepted therapies are available.

H. E. Andren, M. D. Medical Director

Member of N. A. P. P. H.

Accredited by Joint Commission on Accreditation of Hospitals

#### COMPTON SANITARIUM

820 WEST COMPTON BOULEVARD

NE 6-1185 - NE 1-1148

COMPTON, CALIFORNIA

Member of American Hospital Association and National Association of Private Psychiatric Hospitals

High Standards of Psychiatric Treatment . . . . . Serving the Los Angeles Area

Fully Approved by Central Inspection Board of APA

Accredited by Joint Commission on Accreditation of Hospitals

G. Creswell Burns, M.D.

Medical Director

Helen Rislow Burns, M.D. Assistant Medical Director

#### FAIR OAKS

Incorporated

#### SUMMIT, NEW JERSEY

A 70-BED MODERN, PSYCHIATRIC HOSPITAL FOR INTENSIVE TREATMENT AND MANAGEMENT OF PROBLEMS IN NEUROPSYCHIATRY

20 MILES FROM NEW YORK CITY

OSCAR ROZETT, M. D.

Medical Director

TELEPHONE CRestview 7-0143

THOMAS P. PROUT, JR.

Administrator

Established

#### FALKIRK HOSPITAL CENTRAL VALLEY, N. Y.

1889

TELEPHONE: HIGHLAND MILLS, NEW YORK, WABASH 8-2256

Devoted to the individual care and treatment of psychiatric disorders. An active therapy program and diversified buildings permits classification of patients.

Located 2 miles north of Harriman Exit (No. 16) N. Y. State Thruway 50 miles from New York City

Member N.A.P.P.H.

fully approved by Central Inspection Board of APA accredited by Joint Commission on Accreditation of Hospitals

T. W. NEUMANN, JR., M. D.

PERCY E. RYBERG, M. D. Clinical Director

### THE HAVEN SANITARIUM INC. ROCHESTER, MICHIGAN

M. O. WOLFE, M.D. Director of Psychotherapy

RALPH S. GREEN, M.D. Clinical Director

Graham Shinnick

Manager

A psychoanalytically oriented hospital for the treatment of mental and emotional illnesses.

Telephone: OLive 1-9441

In 8 out of 10 patients
Complete Control of
Grand Mal Seizures
with

## "MYSOLINE"

wide margin of safety

#### Composite Results of 20 Clinical Studies

## Results in 262 epileptic patients when "Mysoline" was used alone. Type of Seizure Number of Patients Controlled Improved Seizure 172 (80%) 15 (7%) 27 (13%)

19 (65%)

19 (100%)

Results in 835 epileptic patients who had failed to respond successfully to other anticonvulsants. "Mysoline" was added to current medication which, in some cases, was eventually replaced by "Mysoline" alone.

Type of	Number of	Completely	50-90%	<50%
Seizure	Patients	Controlled	Improved	
Grand Mal Psychomotor Focal Jacksonian	613 130 92	175 (28.5%) 10 (7.7%) 14 (15.2%)	65 (50%)	55 (42.3%)

The dramatic results obtained with "Mysoline" advocate its use as first choice of effective and safe therapy in the control of grand mal and psychomotor attacks.

SUPPLIED: 0.25 Gm. scored tablets, bottles of 100 and 1,000.

LITERATURE AND BIBLIOGRAPHY ON REQUEST

29

19



Psychomotor

Focal Jacksonian

AYERST LABORATORIES

New York 16, N.Y.

Montreal, Canada

10 (35%)

## Therapeutic Education? Individual Therapy? Environmental Therapy?

At Devereux these stock expressions refer to the translation of multi-disciplinary evaluations into an hour-by-hour schedule in which activities, peer or adult associations, and settings are regulated according to a child's particular needs.

Devereux does not offer a program into which a child must fit, but for each child designs and redesigns a program with rehabilitation in view. Each child accepted is placed in a unit with its own home, school, recreational area, and staff, separate from units serving children with differing problems. The successes which students experience as a result of careful planning of all phases of their life are crucial to the goal of promoting physical, social, intellectual, emotional, and spiritual growth. Where indicated, special psychotherapies complement milieu therapy, which remains the cornerstone of the Devereux approach to treatment.

#### CLINICAL STAFF

J. Clifford Scott, M.D.
Edwin H. Abrahamsen, M.D.
Aurelio Buonanno, M.D.
Charles M. Campbell, Jr., M.D.
Fred J. Culeman, M.D.
Ruth E. Duffy, M.D.
William F. Haines, M.D.
Robert L. Hunt, M.D.
Richard H. Lambert, M.D.
Joseph J. Peters, M.D.
Joseph J. Peters, M.D.
Alvis J. Scull, M.D.
Jacob S. Sherson, M.D.
Albert S. Terzian, M.D.
Walter M. Uhler, M.D.
Tirso L. Vinueza, M.D.

Lance Wright, M.D.
F. Ellsworth Henry, S.T.D.
Milton Brutten, Ph.D.
William J. Cohen, Ph.D.
Dorothy E. Conrad, Ph.D.
Sidney L. Copel, Ed.D.
Michael B. Dunn, Ph.D.
Shirley M. Jahnson, Ph.D.
John R. Kleiser, Ph.D.
Murray Levine, Ph.D.
Henry Platt, Ph.D.
Edgar A. Smith, Ed.D.
George Spivack, Ph.D.
Herbert A. Sprigle, Ph.D.
Anne Howe, M.S.
Kenneth E. Evans, B.S.

Psychoanalytic Consultants

G. Henry Katz, M.D.

Herbert H. Herskovitz, M.D.

#### THE DEVEREUX FOUNDATION

A nonprofit organization

Founded 1912

Devon, Pennsylvania Santa Barbara, California

Victoria, Texas

SCHOOLS COMMUNITIES CAMPS TRAINING

RESEARCH

HELENA T. DEVEREUX
Administrative Consultant
EDWARD L. FRENCH, Ph.D.
Director
WILLIAM B. LOEB
Treasurer

Professional inquiries should be addressed to John M. Barclay, Director of Development, or Charles J. Fowler, Registrar, Devereux Schools, Devon, Pennsylvania; western residents address Keith A. Seaton, Registrar, Devereux Schools in California, Santa Barbara, California.

Clied Brichity 712

## THE AMERICAN JOURNAL of PSYCHIATRY

VOLUME 116 NUMBER 8 FEB. 1960

> Official Journal of THE AMERICAN PSYCHIATRIC ASSOCIATION

#### PROVEN EFFECTIVE FOR THE TENSE AND NERVOUS PATIENT



There is perhaps no other drug introduced in recent years which has had such a broad spectrum of clinical application as has meprobamate.\* As a tranquilizer, without an autonomic component in its action, and with a minimum of side effects, meprobamate has met a clinical need in anxiety states and many organic diseases with a tension component.\*

Krantz, J. C., Jr.: The restless patient — A psychologic and pharmacologic viewpoint. Current M. Digest 25:68, Feb. 1958.

### Miltown<sup>®</sup>

the original meprobamate, discovered and introduced by WALLACE LABORATORIES, New Brunswick, N. J.

ADOLF MEYER RESEARCH LECTURE: WHERE VITAL THINGS HAPPEN. Grey Walter	673
INFORMATION INPUT OVERLOAD AND PSYCHOPATHOLOGY. James G. Miller	695
Brain Damage From Chronic Alcoholism: The Diagnosis of Intermediate Stagiof Alcoholic Brain Disease. A. E. Bennett, G. L. Mowery, and Joel T. Fort	705
CURRENT STATUS OF CHILD PSYCHIATRY. J. Franklin Robinson	712
THE MIND-BRAIN PROBLEM AND HUGHLINGS JACKSON'S DOCTRINE OF CONCOMITANCE Max Levin	718
COMMUNITY PLANNING AS A SUPPORT TO TREATMENT. Myron J. Rockmore, and Elias J. Marsh	723
HIGH DOSAGE CHLORPROMAZINE THERAPY IN ACUTE AND CHRONIC SCHIZOPHRENIA R. H. V. Ollendorf	729
RECOVERY FROM SEXUAL DEVIATIONS THROUGH OVERCOMING NON-SEXUAL NEUROTIC RESPONSES. Ian Stevenson, and Joseph Wolpe	737
CLINICAL NOTES:	
Studies on the Neurochemistry of Schizophrenia and Affective Disorders. Samuel Bogoch	743
Reserpine as a Therapeutic Agent in Schizophrenia. Manfred Braun	744
Trials with Several New Drugs. Michael J. Keith	745
Toxic and Other Side Effects of Nardil Phenelzine Sulphate W-1544A. Ujamal C. Kothari	746
Clinical Findings and Psychophysiological Tests of the Effects of a New Psychopharmacologic Agent: Dornwal. Carney Landis, John R. Whittier, Donald Dillon, and Ruth Link	747
The Effect of Deanol on the Activity of Chronic Schizophrenic Patients. Stanley L. Portnow, Mark B. Ardis, and John E. Lubach	748
Clinical Uses of S.C.T.Z.—A Preliminary Report. Kirpal Singh	749
COMMENT:	
A Child Dies	751
Correspondence:	
Phenothiazine Test	752
	174
News and Notes	753
BOOK REVIEWS	756

"...the
patients'
became
easily
manageable"

"...side
effects'
were
gratifyingly
low
in
incidence"
with



In chronic schizophrenia<sup>1</sup> the normalizing influence of Dartal became evident by a return to a quiet and normally active behavior, reduced aggressiveness and tension, lessened anxiety and delusions, and better subjective feeling in 81.5 per cent of a series of fifty-four patients.

All in this group had been refractory to shock therapy, hydrotherapy and ataraxic drugs, and seven had undergone psychosurgery.

Dartal was preferred by the patients to other methods of therapy because side actions were infrequent (occurring in 4 per cent); all side effects were readily reversible.

In another study<sup>2</sup> the drug was found particularly useful in patients with association defect, depersonalization and anxiety, while patients with mood depression did not respond.

The usual dose is one 10-mg. tablet, one to three times daily; individual dosage adjustment is, however, especially important.

- 1. Ferrand, P. T.: Minnesota Med. 41:853 (Dec.) 1958.
- 2. Edisen, C. B., and Samuels, A. S.: A.M.A. Arch. Neurol. & Psychiat. 80:481 (Oct.) 1958.

SEARLE

## THE AMERICAN JOURNAL OF PSYCHIATRY

VOLUME 116

FEBRUARY 1960

No. 8

#### EDITOR

CLARENCE B. FARRAR, M. D., 216 St. Clair Avenue, West, Toronto 7, Ont.

#### **BUSINESS MANAGER**

Austin M. Davies, Ph. B., 1270 Avenue of The Americas, New York 20, New York

#### ASSOCIATE EDITORS

WILLIAM RUSH DUNTON, JR., M. D.

KARL M. BOWMAN, M. D.

Franklin G. Ebaugh, M. D.

Walter L. Treadway, M. D.

STANLEY COBB, M. D.

JOHN C. WHITEHORN, M. D.

S. Spafford Ackerly, M. D.

PAUL H. HOCH, M. D.

LEO KANNER, M. D.

TITUS H. HARRIS, M. D.

LAUREN H. SMITH, M. D.

Francis J. Gerty, M. D.

#### EDITORIAL ASSISTANTS

ANITA GERSHENOVITZ, M. A.

SYLVIA L. LAMBERT, B. A.

#### FORMER EDITORS, 1844-1931

AMARIAH BRIGHAM, M. D., Founder, 1844-1849

T. ROMEYN BECK, M. D.

JOHN P. GRAY, M. D.

G. Alder Blumer, M. D.

RICHARD DEWEY, M. D.

HENRY M. HURD, M. D.

EDWARD N. BRUSH, M. D.

Published by
THE AMERICAN PSYCHIATRIC ASSOCIATION
THE DARTMOUTH PRINTING COMPANY
HANOVER, N. H.

# long-term tranquilizer therapy...without parkinsonism-like side effects

## TRANQUILIZER-INDUCED PARKINSONISM RELIEVED BY 'KEMADRIN'

In the treatment of mental disorders, reduction or discontinuance of ataractic drugs because of extra-pyramidal dysfunction is often undesirable since the beneficial pharmacodynamic effect is also reduced or eliminated. A number of clinicians report that the symptoms of parkinsonism are indicators of the therapeutic effect of the phenothiazine or rauwolfia compounds.

". . . Kemadrin has a definite place in the control and management of druginduced parkinsonism. In many cases it appears to be much more effective than the currently used antiparkinsonian drugs."

> Konchegul, L.: The Use of Kemadrin in the Treatment of Drug-induced Parkinsonism, M.Ann.of D.C. 27:405 (Aug.) 1958.

## 'KEMADRIN'

brand

Procyclidine Hydrochloride

Available as: 5 mg., scored tablets. Bottles of 100 and 1000. Complete literature available on request.



BURROUGHS WELLCOME & CO. (U. S. A.) INC., Tuckahoe, N. Y.

#### THE AMERICAN PSYCHIATRIC ASSOCIATION OFFICERS 1959-1960

President: WILLIAM MALAMUD
Vice President: Franklin G. EBAUGH
Secretary: C. H. HARDIN BRANCH

President-Elect: ROBERT H. FELIX Vice President: S. SPAFFORD ACKERLY Treasurer: ADDISON M. DUWAL

#### COUNCILLORS

For 3 years
Francis J. Gerty
Paul Hoch
Calvin Drayer
Aldwyn Stokes

For 2 years
HARRY C. SOLOMON
LAWRENCE KOLB, JR.
DANA L. FARNSWORTH
ROBERT T. MORSE

For 1 year
FRANCIS J. BRACELAND
PAUL HUSTON
GEORGE TARJAN
JACQUES GOTTLIEB

#### EXECUTIVE COMMITTEE

WILLIAM MALAMUD ROBERT H. FELIX C. H. HARDIN BRANCH Addison M. Duval Francis J. Gerty Jacques Gottlieb Ex-Officia
FRANKLIN G. EBAUGH
S. SPAFFORD ACKERLY

#### ASSEMBLY OF DISTRICT BRANCHES

Alfred Auerback (Speaker) JOHN R. SAUNDERS
(Speaker Elect)

(Recorder)

#### MEDICAL DIRECTOR

MATHEW Ross, 1700-18th Street, N. W., Washington 9, D. C.

#### EXECUTIVE ASSISTANT

Austin M. Davies, 1270 Avenue of the Americas, New York 20, New York

#### CHAIRMEN OF COMMITTEES

#### CONSTITUTIONAL COMMITTEES

Arrangements
ROBERT GARBER
Board of Tellers
EVELYN IVEY
Membership
DICK MCCOOL
Nominating

LEO BARTEMEIER

STANDING COMMITTEES
(Internal Activities

of the Association)

Budget

JACK R. EWALT

Constitution and By-Laws

HENRY A. DAVIDSON

Ethics

MESROP TARUMIANZ
House Committee

ZIGMOND LEBENSOHN Increasing Responsibilities of the APA

HARVEY J. TOMPKINS

Program

JOHN DONNELLY

STANDING COMMITTEES (Technical Aspects)

HARVEY J. TOMPKINS Coordinating Chairman

Aging EWALD W. BUSSE

Child Psychiatry
J. Franklin Robinson

History of Psychiatry
J. SANBOURNE BOCKOVEN

Medical Education
GEORGE C. HAM
Mental Deficiency
HOWARD BAIR

Public Health

JAMES V. LOWRY
Rehabilitation

BENJAMIN SIMON

Research
MILTON GREENBLATT

Therapy Henriette R. Klein

#### STANDING COMMITTEES

(Professional Standards)
WILFRED BLOOMBERG
Coordinating Chairman
Psychiatry and the Law

Louis GENDREAU

Liaison with American Academy
ROBERT MATTHEWS

ROBERT MATTHEWS

Liaison with American Hospital

Association
RAYMOND W. WAGGONER

Mental Hospitals
JOSEPH E. BARRETT

Nomenclature and Statistics
Moses Frohlich

Private Practice
JOHN COTTON
Psychiatric Nursing
GRANVILLE JONES

Psychiatric Social Work
MAURICE FRIEND

Relations with Psychology JOEL S. HANDLER Standards and Policies of Hospitals and Clinics

STEWART GINSBERG

STANDING COMMITTEES (Community Aspects of Psychiatry)

PAUL LEMKAU
Coordinating Chairman

Academic Education
C. DOUGLAS DARLING

Cooperation with Leisure Time

Agencies

ALEXANDER MARTIN

Disaster and Civil Defense

EDWARD J. KOLLAR

Occupational Psychiatry
RALPH T. COLLINS

International Relations

LOTHAR KALINOWSKY
National Defense

BENJAMIN H. BALSER

Preventive Psychiatry
HENRY WORK

Public Information HENRY LAUGHLIN

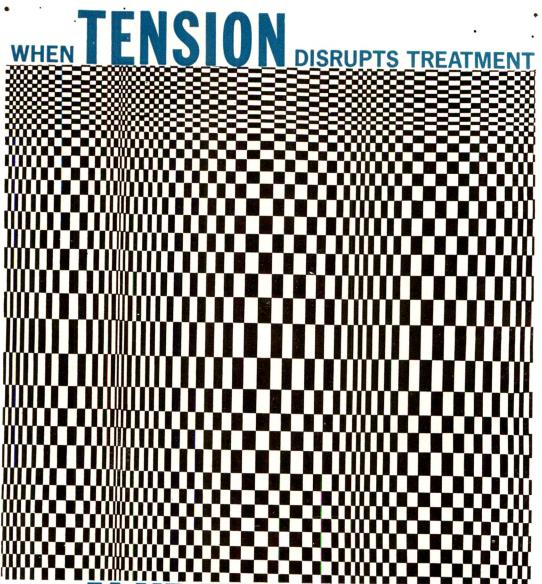
Religion and Psychiatry
EARL LOOMIS

Veterans

JULIUS SOBIN

SPECIAL COMMITTEE
Certification of Mental Hospital
Administrators

WINFRED OVERHOLSER



## ELIXIR ALURATE DISRUPTS TENSION

Dependable, prompt-acting daytime sedative.

Broad margin of safety. Virtually no drowsiness. Over a quarter century of successful clinical use. Alurate is effective by itself and compatible with a wide range of other drugs. To avoid barbiturate identification or abuse, Alurate is available as Elixir Alurate (cherry-red) and Elixir Alurate Verdum (emerald-green).

Adults: ½ to 1 teaspoonful of either Elixir Alurate or Elixir Alurate Verdum, 3 times daily. ALURATE®—brand of aprobarbital.

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N. J.

#### AMERICAN JOURNAL OF PSYCHIATRY

#### INFORMATION FOR CONTRIBUTORS

Manuscripts—The *original* manuscripts of papers read at the annual meetings of the Association should be deposited with the Secretary during the meetings, or sent to the New York office promptly afterward. Do not deposit carbon copies.

Papers read at the annual meetings become the property of the Association. Not all papers read, however, can be published in the JOURNAL, and authors wishing to publish in other vehicles will first secure from the Editor the release of their manuscripts.

Papers will not be accepted for the annual program if they have been previously read at other meetings or if they have been already published.

Papers contributed during the year (not on the annual program) should be sent to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

- Style—Manuscripts should be typewritten, double spaced, on one side of the paper. They must be prepared in conformity with the general style of The American Journal of Psychiatry. Retain a carbon copy of manuscript and duplicates of tables, figures, etc., for use should the originals be lost in the mails.
- Multiple Authorship—The number of names listed as authors should be kept to a minimum, others collaborating being shown in a footnote.
- Illustrations—Authors will be asked to meet printer's costs of reproducing illustrative material.

  Copy for illustrations cannot be accepted unless properly prepared for reproductions. Wherever possible, drawings and charts should be made with India ink for photographic reproduction as zinc etchings. Photographs for halftone reproduction should be glossy prints. Illustrations should be as small as possible without sacrificing important detail. Redrawing or preparing illustrations to make them suitable for photographic reproduction will be charged to author.
- Authors' Corrections in Proofs—Corrections, additions or deletions made by authors are to be charged to them. These alterations are charged on a time basis at the rate of \$7.00 per hour. Proper editing of original manuscript is important to avoid the expense of correction.
- Tables—Tables should be typed on separate sheets. Tables are much more expensive to set than text material and should be used only where necessary to clarify important points. Authors will be asked to defray cost of excessive tabular material.
- References—References should be assembled according to author in a terminal bibliography, referred to in text by numbers in parentheses. Bibliographical material should be typed in accordance with the following style for journals and books respectively:
  - 1. Vander Veer, A. H., and Reese, H. H.: Am. J. Psychiat., 95: 271, Sept. 1938.
  - 2. Hess, W. R.: Diencephalon. New York: Grune & Stratton, 1954.

Abbreviations should conform to the style used in the Quarterly Cumulative Index Medicus.

The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

Articles appearing in this Journal do not necessarily reflect the official attitude of The American Psychiatric Association or of the Editorial Board.

The subscription rates are \$12.00 to the volume: Canadian subscriptions \$12.50; foreign subscriptions, \$13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate students in psychology, psychiatric social work, and psychiatric nursing, \$5.00 (Canada \$5.50). Single issues, \$1.25. Copyright 1959 by The American Psychiatric Association.

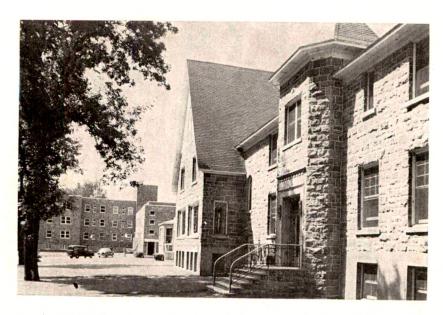
Office of Publication, 10 Allen St., P.O. Box 832, Hanover, N. H.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 10 Allen St., P.O. Box 832, Hanover, N. H., or to 1270 Avenue of the Americas, New York 20, N. Y.

Editorial communications, books for review, and exchanges should be addressed to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

Second class postage paid at Hanover, New Hampshire.

## A Modern Psychiatric Institution in Montreal, Canada



- A non-profit voluntary institution, for the study, care and treatment of emotional, mental, personality and habit disorders.
- On a foundation of dynamic psychotherapy, all other therapies are used as indicated.
- Fully accredited for the undergraduate training of residents, psychologists, social workers and nurses.
- Adequate supervision of the treatments program and therapeutic team by the psychiatrist in chief.

#### CHARLOTTE TASSÉ, R.N. BERNADETTE LÉPINE R.N.

President & Vice-President of the Board of Directors.

#### CAMILLE LAURIN, M.D.

Scientific Director.

Member of the "Société Française de Psychanalyse." Certified in Psychiatry from the College of Physicians and Surgeons of the Province of Quebec.

Brochures and rates sent on request.

#### ALBERT PREVOST

6555 Gouin Blvd. West, Montreal, P.Q. Phone FE 4-2440 Founded in 1919

NEURO-PSYCHIATRIC CENTER

- ACCREDITED BY THE JOINT COMMISSION ON ACCREDITATION OF HOSPITALS -





in psychoses and chronic neuroses... enhances therapeutic "acceptance" accelerates therapeutic response



## a phenothiazine with the differences that count in psychiatric therapy **Trilafon**®

In contrast to earlier phenothiazine derivatives, which cause sedation, psychomotor retardation, ncreased appetite and excessive weight gain...[Trilafon] [ordinarily does] not produce troublesome sedation or psychomotor retardation in these patients."\*

Available for psychiatric use as Tablets, Injection, Liquid Concentrate. Consult Schering literature for ndications, dosage and administration, precautions and contraindications.

5-415

\*Ayd, F. J., Jr.: New England J. Med. 261:172, 1959.

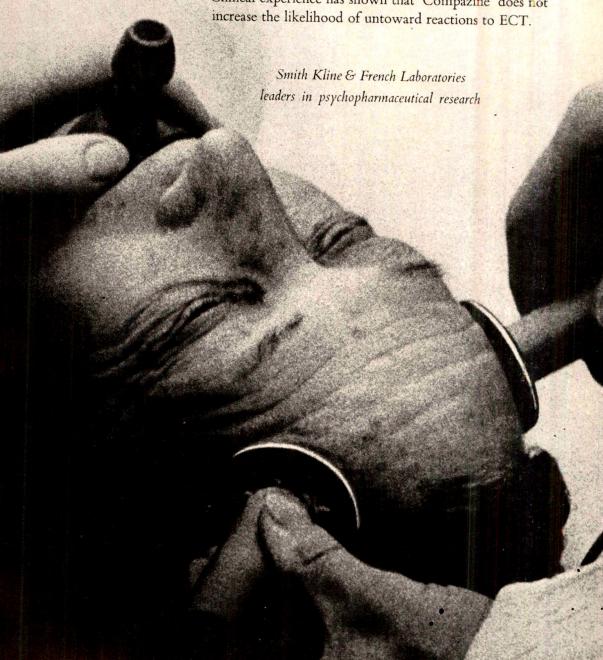




#### EFFECTIVE COMBINATION

'Compazine' can allay the anxiety and apprehension attendant upon ECT. 'Compazine' can also help reduce the excitement, agitation and confusion that may be induced by ECT.

Clinical experience has shown that 'Compazine' does not

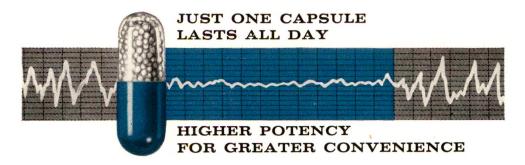


#### NEW AND EXCLUSIVE

## FOR SUSTAINED TRANQUILIZATION

MILTOWN® (meprobamate) now available in 400 mg. continuous release capsules as

## Meprospan-400



- relieves *both* mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast,

one capsule with evening meal

Available: Meprospan-400, each blue capsule contains

400 mg. Miltown (meprobamate)

Meprospan-200, each yellow capsule contains

200 mg. Miltown (meprobamate)

Both potencies in bottles of 30.

₩WALLACE LABORATORIES , New Brunswick, N. J.

CME-8427

## once a day dosage for the psychiatric patient



Prolixin is a new, exceptionally effective behavior modifier with sustained and prolonged action for your psychiatric patients. Its extended action, permitting a single daily dose, has been thoroughly demonstrated in clinical trials.<sup>1,2</sup>

Prolixin is particularly useful in the management of acute and chronic psychotic states characterized by agitation, excitement, explosive behavior and turbulence — in such conditions as schizophrenia, mania, psychoses due to organic brain disease, and senile psychoses.

Providing lowered toxicity and maximum economy, Prolixin not only elicits a greater therapeutic response but also affords improvement in many patients previously refractory to other phenothiazines. This is true whether the mental disorder is of short or long duration.

The usual extrapyramidal symptoms encountered with other potent phenothiazine derivatives have been reported. Less common effects have been hypotension, drowsiness, agitation, restlessness, and anorexia. Side effects have disappeared with reduced dosage or temporary discontinuance of the drug. Francisco.

Dosage: Optimum dosage levels vary from patient to patient and must be determined individually. Most patients may be maintained on 1 mg. – 5 mg. daily, Supply: 1.0 mg., 2.5 mg., and 5 mg. tablets. References: 1. Taylor, I.J.: Clin. Res. Notes 2:1 (Aug.) 1959. 2. Morrow, L.L.: Clin. Res. Notes 2:8 (Aug.) 1959. 3. Darling, H.F.: Dis. Nerv. System 20:167 (April) 1959. 4. Niswander, G.D., and Karacan, I.: Dis. Nerv. System (In Press). 5. Freed, J.E.: Clin. Res. Notes 2:12 (Aug.) 1959. 6. Weiss, I.I.: Clin. Res. Notes 2:12 (Aug.) 1959. 7. Stevenson, L.E.: Clin. Res. Notes 2:10 (Aug.) 1959.



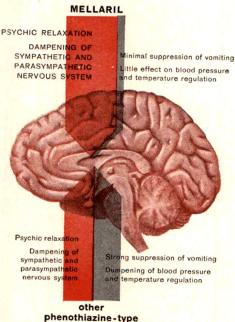
## NOW... SAFER, EFFECTIVE TRANQUILIZER THERAPY. tranquilization anti-emetic greater specificity of tranquilizing action -divorced from such "diffuse" effects as anti-emetic action explains why THIORIDAZINE HCI is virtually free of such toxic effects as . jaundice . Parkinsonism . blood dyscr. "Thioridazine [MELLARIL] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines.... This drug appears to represent a major addition to the safe and effective treatment of a wide

range of psychological disturbances seen daily in the clinics or by the general practitioner."

## a new advance in tranquilization: greater specificity of tranquilizing action results in fewer side effects

The presence of a thiomethyl radical (S-CH<sub>3</sub>) is unique in Mellaril and could be responsible for the relative absence of side effects and greater specificity of psychotherapeutic action. This is shown clinically by:

A specificity of action on certain brain sites in contrast to the more generalized or "diffuse" action of other phenothiazines. This is evidenced by a lack of appreciable anti-emetic effect.





- 2 Less "spill-over" action to other brain areas hence, absence of undue sedation, drowsiness or autonomic nervous system disturbances.
- 3 A notable absence of extrapyramidal stimulation.
- 4 Lack of impairment of patient's normal drive and energy.
- 5 Virtual freedom from such toxic effects as jaundice, photosensitivity, skin eruptions, blood forming disorders.

Indication	Usual Starting Dose	Total Daily Dosage Range
ADULTS: Mental and Emotional Disturbances:		
MILD-where anxiety, apprehension and tension are present	10 mg. t.i.d.	20-60 ma
MODERATE— where agitation exists in psychoneuroses, alcoholism, intractable pain, senility, etc.	25 mg. t.i.d.	50-200 mg
SEVERE— in agitated psychotic states as schizophrenia, manic depressive, toxic psychoses, etc.:		
Ambulatory Hospitalized	100 mg. t.i.d. 100 mg. t.i.d.	200-400 mg. 200-800 mg.
CHILDREN: BEHAVIOR PROBLEMS IN CHILDREN	10 mg. t.i.d.	20-40 mg.

Mellaril Tablets, 10 mg., 25 mg., 100 mg.

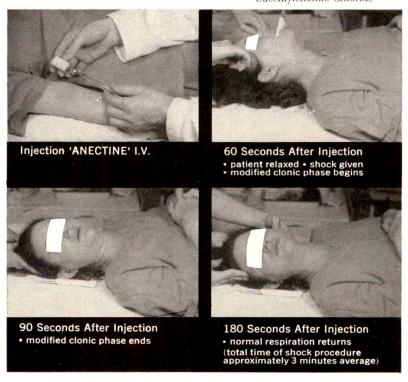


tranquilizers

#### SAFER ELECTROSHOCK THERAPY

ultra-short-acting skeletal muscle relaxant

relaxant ANECTINE De la relaxa



rapid relaxation rapid recovery

#### Comments from the literature:

"... method of choice."

Havens, L. L.: Dis. Nerv. System 19:1 (Jan.) 1958.

"... recommend its use."

Impastato, D. J., and Gabriel, A. R.: Am. J. Psychiat. 114:698 (Feb.) 1958.

"... treatment of choice."

Michael, K. D., and Wunderman, D. C.: J. Nerv. & Ment. Dis. 126:535 (June) 1958.

"... irrespective of age."

Robie, T. R.: J. M. Soc. New Jersey 52:82 (Feb.) 1955.

Complete literature available upon request.

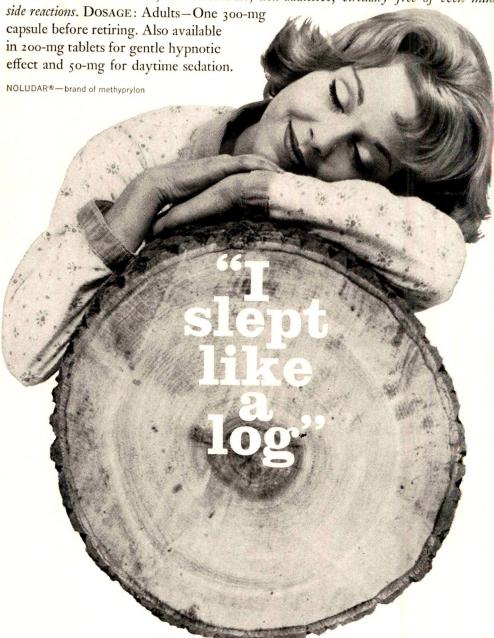
'Anectine'® brand Succinylcholine Chloride Injection: 20 mg. in each cc., multi-dose vials of 10 cc.



## new Noludar 300

300 mg CAPSULES

A good night's sleep can be described in many ways, but "natural" comes closest to the kind of sound, refreshing sleep your patients will enjoy when you prescribe new Noludar 300. Prompt action ... unsurpassed safety ... 6 to 8 hours of undisturbed rest ... and a cheerful awakening without "hangover"—such is the quality of sleep with Noludar. Well tolerated, non-barbiturate, non-addictive, virtually free of even minor



ROCHE LABORATORIES · Division of Hoffmann-La Roche Inc · Nurley 10, New Jersey

#### in depression...positive and invaluable therapeutic results, but

#### PLEASE DO NOT PRESCRIBE



UNLESS... the cautions and provisions for the use of this drug can be consistently applied to the management of your patients. 

We make this request now because our surveys indicate that in approximately 50 per cent of patients, prescribed dosage of CATRON is higher than recommended, or prescriptions are not limited to amounts small enough to insure frequent return of the patient for observation. Also, in some instances, therapy was unduly prolonged. 🗆 CATRON has displayed outstanding efficacy in depression, angina, and rheumatoid arthritis. But because of the nature of MAO inhibitor therapy, your attention is directed to the extensive and useful instructions prominently displayed in our literature on CATRON, and repeated below.

HOW TO USE CATRON: CATRON is a monoamine oxidase (MAO) inhibitor useful in the treatment of depression and of other disorders indicated below. It is recommended for use in carefully selected cases and in those patients who have not responded to the milder drugs.

ADMINISTRATION AND DOSAGE: Dosage of CATRON must be individualized according to each patient's response. The initial daily dose should not exceed 12 mg, and should be reduced as soon as the desired clinical effect is obtained. In severe depressions some clinicians desire rapid results and begin treatment with 24 mg. daily; this dosage should not be continued for more than a few days. A single daily dose in the morning is recommended. A continuous or interrupted schedule may be used, the latter during the

maintenance period.

DEPRESSION (Endogenous, Reactive, Postpartum, Involutional, and Depression Secondary to Schizophrenic or Neurotic Reaction): initially, 12 mg. once daily for approximately 2 weeks, or less if improvement appears. Dosage is then reduced to 6 mg. daily. As improvement continues, maintenance dosage of 6 mg. every other day or of 3 mg. daily often proves satisfactory. An interrupted dose schedule is

recommended for long-term therapy.

ANGINA PECTORIS: 3 to 6 mg. daily in most cases. Relief of pain and elevation of mood may be dramatic. Victims of angina pectoris who respond in this manner should be cautioned against overexertion induced by their sense of well-

RHEUMATOID ARTHRITIS (Adjunctive Therapy-in severely disabling forms, particularly when accompanied by depression): 9 to 12 mg. daily for 3 days, then 6 mg. daily, reducing further to 3 mg. daily on signs of improvement. If a conventional antiarthritic agent is used, lower doses of each are indicated.

CAUTION: Certain circumstances should be watched carefully when using CATRON.

DRUG POTENTIATION—The list of drugs which CATRON potentiates is not yet complete. Hence, caution should be exercised when combining CATRON with any other drugs such as tranquilizers, phenothiazines, the amphetamines, barbiturates, and hypotensive agents.

HYPOTENSIVE EFFECT—All normotensive patients receiving CATRON, but especially elderly patients, should be warned about the possibility of orthostatic hypotension during the initial period of higher dosage. In the few instances where this may occur, lowering of the dose will usually permit continuation of therapy

VISUAL DISTURBANCES-A reversible red-green color defect has been reported in a few patients, chiefly hypertensives, on extended therapy with CATRON. Discontinue the drug if such changes occur. In a few instances, at unusually high dosage, or where the drug was not discontinued following color disturbances, diminished visual acuity occurred.

ANIMALS, NEUROLOGIC SIGNS-In toxicity studies with animals a neurologic syndrome has been observed, character-

ized by tremors, muscle rigidity and difficulty in locomotion. Animals displaying this visible neurologic syndrome after prolonged parenteral administration usually disclosed a neurologic lesion at autopsy. In other animals these visible neurologic symptoms disappeared following cessation of the drug. No lesions were found after oral administration. Although extensive clinical experience has not shown such reactions to be a problem in humans in recommended dosage. should a similar neurologic disturbance occur, the possibility of drug action should be considered.

SIDE EFFECTS-Major side effects requiring cessation of therapy are infrequent. Other side effects-constipation, delay in starting micturition, increased sweating, hyperreflexia, ankle edema, blurring of vision, dryness of the mouth-are usually readily controlled by lowering the dosage. Rash, observed in a few patients, cleared up rapidly upon discontinuing therapy.

RNING: Although pharmacologic evidence indicates that CATRON has a selectivity for the brain, it, as well as other monoamine oxidase inhibitors, may be associated with hepatitis. Because of the possibility of this life-threatening hepatitis, the following recommendations and precautions should be observed. If necessary, the patient should be hospitalized to expedite adherence to this regimen.

The Following Precautions Are Recommended:

1. In all instances daily dose should not exceed 12 mg. 2. Reduce daily dose as soon as response is established,

usually in a matter of 1 to 2 weeks.

- 3. Do not prescribe to a patient more than sixteen 6 mg. tablets or thirty-two 3 mg. tablets of CATRON at one time. 4. Patient should return for observation before additional CATRON is prescribed. For this reason, prescriptions for CATRON should be marked "Not refillable.
- 5. Perform regular liver function tests.
- 6. Do not use the drug in patients with a history of viral hepatitis or other liver abnormalities.

SUPPLIED: CATRON is the original brand of pheniprazine hydrochloride. It is supplied in tablets of 3 mg. and 6 mg., bottles of 50.

BIBLIOGRAPHY: (1) Agin, H. V.: The Use of JB-516 (CATRON) in Psychiatry, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (2) Bercel, N. A.: Pharmacologic Approach to the Study of the Mind, Springfield, III., Charles C Thomas, 1959, in press. (3) Kinross-Wright, J.: Panel Discussion of Psychic Energizers, ibid. (4) Kinross-Wright, J.: Panel Discussion of Psychic Energizers, ibid. (4) Kinross-Wright, J.: Experience with JB-516 (CATRON) and Other Psychochemicals in Clinical Practice, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (5) Horita, A., and Parker, R. G.: Comparison of Monoamine Oxidase Inhibitors, Peffects of Iproniazid and Its Phenyl Congener, Proc. Soc. Exper. Biol. & Med. 99:617, 1958. (6) Horita, A.: Beta-Phenylisopropylhydrazine: A Monoamine Oxidase Inhibitor, Fed. Proc. 17:379, 1958. (7) Horita, A.: The Pharmacology of the Monoamine Oxidase Inhibitors, in A Pharmacologic Approach to the Study of the Mind, Springfield, III, Charles C Thomas, 1959, in press. (8) Kennamer, R., and Prinzmetal, M.: Treatment of Angina Pectorics with CATRON (18-516), Am. J. Cardiol. 3:542, 1959. (9) Scherbel, A. L., and Harrison, J. W.: The Effects of Iproniazid and Some Other Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.

For detailed information, request Brochure No. 19, CATRON.

Lakeside Laboratories, Inc . Milwaukee 1, Wisconsin

#### ADOLF MEYER RESEARCH LECTURE

#### WHERE VITAL THINGS HAPPEN 1

W. GREY WALTER, Sc.D.2

The great honor of delivering this lecture is a very personal one, since Meyer was one of the first to recognise that physiology must itself evolve in order to encompass the problems of mentality, and so I may dare to assume that you as psychiatrists consider my particular brand of physiology sufficiently advanced to meet the exacting requirements laid down a generation ago by the man whose name we honor today.

The title for this lecture is taken from a passage in a paper by Adolf Meyer on the scope and teaching of psychobiology (3).

All the writings of Adolf Meyer are so full of scholarship, so well informed, so original, so passionately sincere-and so up-to-date that I could easily fob you off with a series of quotations from them-it is hard to find any subject related to mental activity and brain function that is not dealt with in some part of Meyer's work. The particular passage from which I have taken my title is concerned with the integration of mental function and if you will permit me to quote further extracts, these will outline vividly for us the scope and purpose of this lecture.

We must establish the habit of scrutinising the facts and factors . . . It is certainly not mere physiology. It is . . . thought of in settings for which physiology does not have any terms and for which it does not cultivate adequate terms . . . This requires experience with both facts and methods and this requires superfine practice and not mere "thinking" and reading and talking. Yet it is just this kind of functioning which we may have to review . . . We must turn to where vital things happen, where they have their beginnings and developments. And this is not so simple . . .

I find some cause for pride and comfort too in sharing with Meyer a mixture of European and American influences. Although our work paths moved in opposite directions, our cultural plans are similar. Like Meyer I have genetic roots in Switzerland and educational origins in the Mid-West-though I have the additional advantage of having been born in the heart of America. Like him too I have a great distrust for the tyranny of words and I echo with feeling his expostulation "When it comes to psychobiology, I wish it were possible to get rid of the words and get the sense to unprejudiced readers." I support with enthusiasm his exhortation "It is always wisest to pay attention to the whole range of factors" but like him I can see very clearly the colossal difficulties that anyone who tries to see men steady and see them whole must overcome. Endeavors in this field are not likely to attain the critical mass for an explosion into front page glamour, nor can we easily attract by horror by "nostalgie de la boue," those who have committed themselves irrevocably to what Meyer dismisses as "The imagined cesspool of the Unconscious."

Perhaps the most encouraging and reassuring acknowledgment is the sentence found in one of Meyer's diaries, which I can repeat with calm assurance—"I am glad that I have decided to study the whole of

During the 14 years that have passed since the end of World War II, psychobiology has developed beyond the hopes and expectations of the early pioneers. As always we must acknowledge the powerful and perpetual stimulus provided by the. technological advances evoked in military emergency. Equipment which we now consider conventional and basic would have been a crazy dream 20 years ago. With the

<sup>2</sup> Director, Physiological Dept., Burden Neurological Inst., Stoke Lane, Stapleton, Bristol, Eng.

<sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

elaboration of apparatus has gone a vast multiplication of research centers and specialised techniques. At the outbreak of war in Europe there were perhaps half a dozen tiny nuclei of psychobiological research, scarcely worthy of the name laboratory. Now there are hundreds scattered all over the world, some concerned mainly with the strictly clinical and urgent necessities of diagnosis and treatment, others entangled more subtly with the delicate problems of individual behavior and social relations envisaged by Meyer, never before so clearly defined and so tantalisingly near solution.

As Meyer knew, this is certainly not mere physiology; neither our training nor our inclinations have fitted us for this task, and we know that we are entering a new domain with no credentials or passport other than an insatiable hunger for selfknowledge and a limited capacity for selfdiscipline. The physiological laws on which we were nurtured do not run in this realm where the individual is king, since they ignore idiosyncrasy. Nor can we rely on the statistical conventions with which we have tried to overlay the doctrinal barriers between our disciplines, for these too are better adapted to the effacement of individual variations than to their clarification. What is the source of these difficulties? Why have our physiological excursions into the domain of mentality been so crudely empirical or at the best intuitive and inductive? At the present time there is still not one single principle of mental physiology that can claim the status of a natural law, in the sense that it receives universal acceptance and permits deductive prediction or extrapolation.

The main theoretical difficulty is that the classical methods of scientific study, inherited by physiologists from their intellectual forbears in the basic sciences, depend on the isolation of a single variable in large-scale simple systems, or, in the special case of contemporary physics, the unidentifiable elements in complex microsystems. Neither of these methods is directly applicable to the problems encountered in psychobiology, which deal with large-scale complex systems of heterogeneous elements, interacting freely with one an-

other through probabilistic links, the vast majority of which are quite inaccessible even to the most delicate probe. Human brains are, in the terms used by theoretical physicists "immense systems" and it is doubtful whether there are enough of them to permit generalisation. This may sound absurd-there are over 2,000 million human beings around us and surely, we may say, this constitutes a large enough population to yield a suitable sample. But this is not necessarily so. Let us consider the sort of system we are dealing with. You may have recognised the definition in the pre-ceeding paragraph "complex systems of heterogeneous elements interacting freely with one another through probabilistic links" as applying to human nervous systems-it also applies of course to human societies. But what do we mean by complex, and what is the order of complexity? Anatomists tell us-and in this case we may believe them though their data are from material they describe euphemistically as "fixed"—that there are at least 10,000 million neurones in our brains. This is not really a very large number by cytological standards-less than the number of red cells in our blood stream-but what we have to consider is that these elements are interconnected in various ways. The cells in our blood or skin, even in the other great internal organs, are working essentially in parallel, one may say: they are not in any useful sense a community. The relations between the cellular elements in other organs depend only on two factors, contiguity and atmosphere, that is the nature of the fluids that nourish or control them. All cells have a climate and some degree of neighborliness, some participate in a serial fashion in functions such as movement or digestion, but only in the central nervous system do we find the texture of interlaced channels of communication that merits the term complexity.

The effect of this inter-connectedness can be estimated numerically, with some reserve on the grounds of our ignorance, but with enough confidence to illustrate the scale of the psychobiological problem. Starting with a complex system containing only two elements and allowing only the minimal degree of structuring and quali-

tative scope, we find that already we have to consider 7 possible modes of behavior or dynamic states. Perhaps it is worth repeating an illustration I have given before of what this means in practical terms. Suppose that our two elements are not neurones in a nervous system but human beings, say a man and his wife forming a household and that we play the role not of impersonal physiologist but of crafty burglar. Before we make our entry to this little system we must "case the joint" to see what possibilities exist. We shall note the following modes of existence in the household; the zero mode O-when both husband and wife are asleep, mode A when the husband is at home alone, B-the wife alone; A, B-both at home but isolated from one another, A→B—both at home with the husband addressing his wife, A←Bthe same but (some would say more probably) with the wife addressing the husband, and finally A⇒B-the same but with the couple in mutual converse. As a criminal objective we would recognise the first and last modes as most promising for our purposes. In the other modes either or both human elements would be attentive to outside stimuli, but in sleep-or death -and when preoccupied with each other, the two element systems cannot attend to external matters. Note that this variety of modes is established without recourse to external intervention. If we introduce this the difficulties increase very rapidly, as for example, when both elements are distracted by a common external stimulus (watching television is the obvious analogy). In these circumstances again we may plan an unobtrusive entry.

This little allegory may seem far-fetched to some of you, trite and trivial to others, but I think it is worth spelling out what we mean by complexity because it is a word that is often used casually and sometimes as a pretext for defeatism in psychobiology. The important point is that the complexity of our neural and social apparatus can be estimated, so that, having appreciated the situation in terms of the strength of the opposing forces, we can more confidently plan our strategy and tactics for a better co-ordinated and more

economical assault.

Clearly, we shall be wasting our time if we try to attack such problems by a simple multiplication of conventional weapons. Our losses in treasure and morale would be too high and we should give away our own position completely. This is a very serious problem in the design of experiments, the interaction between observer and observed, and it is particularly insidious in situations where organisms attempt to study others of the same species -as psychiatrists know so well. The techniques of psychoanalysis have been criticised and ridiculed on many occasions and we must all admit that certain aspects of them are open to ribald and satirical caricature. None the less the detachment and apparent indifference of the analyst, his patience and carefully cultivated impersonality, which so enrage or discourage some patients, are derived from the laboratory rather than the clinic, and are to be commended by all who claim a scientific education in detachment, patience, humility and serendipity.

In more sophisticated and modish terms, how are we to ensure that information flows from the complex system under scrutiny-the human being-to the observer, the clinician or scientist and not in the reverse direction? As I have said, you as clinical psychiatrists achieve this by experience and endurance. Your experience of patients tells you more about the likely behavior of patients than your patients will know of the behavior of psychiatrists. You have real case histories, they have only the comic strips and the public library. Your endurance ensures that you will outlast the longest silence and appreciate the most frivolous chatter. As well as these Fabian tactics you also have in reserve a variety of physical stratagems to soften up the taciturn and quell the garrulous. And all the time you can observe the subtle display of bodily changes, the gestures, fidgeting, sighs and changes of color that provide the trained clinician with a running commentary on his patient's state of mind and feeling. In all this, your clinical art, you have a sort of information valve, a one way rectifying and amplifying device that should bring you some understanding even if it does not always give you the power to

control or heal. And above all, you retain appreciation for the individual—you may sometimes think something like "this is typical of an endogenous depression" but more often you say "this is how this patient shows that he is depressed."

Now at last in our experimental work we are trying to emulate these faculties of yours, but we have some difficulties that you have not, and some resources which you could not use. Where you communicate mainly through language with all the ambiguities and romantic overtones that this implies, we try as well to include in our survey the patterns of electrical change within the brain. Furthermore, accepting the importance and validity of the unrehearsed and uncontrollable activities of the autonomic nervous system, we take pains to record and correlate with all the other information the changes in heart and lungs, skin and blood vessels, eyes and muscles that reflect, albeit obliquely, the swirling tides of passion so well contained and disciplined by the well-drilled supervision of the neo-cortical networks.

As you know, this mechanisation of our scientific armament has involved the deployment of heavy pieces of technical artillery. This apparatus again is, in effect, an amplifying valve to direct and concentrate the flow of information from subject to observer, but the interaction problem becomes even more subtle and serious. We cannot conceal our strength by discreet withdrawal out of view; our subjects are constrained by manifold appliances which we make as inconspicuous as possible, but they are still obtrusive. So, whether we like it or not, our subjects gain some information from us, and we counter by certain mild deceits which in the military tradition divert attention from essential manoeuvres to trivial ones.

In the early phases of these researches, we and most other investigators, with echoes of our statistical courses ringing in our ears, attempted to reduce or systematise the immense amount of objective data we amassed by conventional procedures, but as I have already affirmed, this is a vain exercise. There is no more justification for say, computing the average frequency of a brain rhythm than there is for counting

the syllables in a patient's verbal complaint. As in recognising speech, it is the pattern and cadence that we must attend to rather than the elementary numerical features. This is easily said, but to achieve it we must discard many of our most trusted tools, go back to school, learn new tricks, sit meekly at the feet of the great clinical scientists who can still detect the patterns of variation, the syndromes of pathology that enrich the palette and guide the brush of the clinical artist.

For, though our concern is mainly with our normal fellow beings, the attitude we have to adopt is essentially a clinical one. even if the signs and symptoms are filtered through miles of wire and paper and displayed as lifeless figures and graphs. This is not to say that we choose to ignore the qualitative human factors in favor of the objective readings of our instruments; on the contrary our task is to relate the two classes of observation in such a way as to confer depth and perspective without freezing the picture into a meaningless and inexpressive pose. It is in this composition, framed in the regularity of science but with all the gentleness and variety of human feeling that we must try to find where it is that vital things have their beginning and their development.

We can be sure that Meyer chose this word "vital" deliberately for its double meaning; the things that concern us are both important and lively—but what, for our purposes, is important and what is life? Not all important things are alive and not all living things are important—or are they?

We must select some aspects of living things for their importance and we must be sure that they are important in more than a local, temporary and eccentric way. The history of science is littered with the relics of "important" ideas and "facts" that later generations discarded as superstition and illusion. So often too we are misled by technical virtuosity or verbal fluency. Have we not all spent months of our professional life struggling with scientific rhetoric or groping among instrumental cobwebs? Perhaps in another generation or so our mathematical colleagues will come to our aid with new, more comprehensive and comprehensible algebras that can express our

ideas and condense our observations without straining too much our already stressed understanding.

At the present time I think we have only one way of dodging between the glorious earthy ambiguities of the vernacular and the serene unintelligible abstractions of mathematics-to crystallise our ideas into working models, material analogues clean shaven by Occam's razor, clear, simple, unequivocal and like crystals, brittle, so that when our hypotheses break down as they always will, they shear with a clean snap and do not yield and flow as words and phrases do. Some of you have seen examples of what I mean by working models and many of my colleagues now feel as I do, that this is the only trustworthy channel of communication between the allies in this no man's land of science. If these devices seem only frivolous to you, then look and listen more closely; like telegraph operators in an idle moment we sometimes indulge in friendly chatter to keep the line alive-we all enjoy a gossip and a family joke. But in between the puns and jingles you will find messages of the most serious and strategic import. What are these messages and what action do they demand?

Without going into laborious detail, I can outline quite briefly the ways in which study of artificial animals has helped to direct our attention to truly vital things. First, we can distinguish and define more clearly those aspects of behavior that are specifically in the vital class. It is not so long since such phenomena, as goalseeking behavior, self-regulation and selfrepair, appreciation of optima, logical decision, free choice between equiprobable objectives, the identification of self, the development of personality, the formation of co-operative communities, modification of behavior by experience, and so forth were assumed to be uniquely the attributes of living creatures. But now all these and much besides are known to be imitable by artificial creatures. Indeed some of these functions are performed far more accurately and consistently by artefacts than by animals or men. In some cases, for example, the regulation of complex processes, arithmetic, logical analysis, are now delegated almost exclusively to non-living contrivances; in others the demonstration of mechanical competence is on a model scale. If no one has conceived a machine like a man, it is because the human market is already saturated and the conventional means of production satisfy other needs at the same time.

These practical developments and the theoretical inferences from them may seem to lead to the conclusion that no important differences are to be found between living and non-living systems. But this is not so; what seems to be nearer the truth is that there is a continuum or spectrum of intricacy, with our simplest contrivances in a class at one end and ourselves and any superior beings in another class at the other. Between these extremes there are imperceptible gradations of liveliness; at the lower end it would not be worth living and the higher end would not be worth imitating. Is this gradation merely one of scale, or are there fundamental differences of quality between the extremes? Scale differences there certainly are; the simplest creatures in flesh or metal are also the smallest, the commonest, the most easily imitated. We human beings and our more elaborate domesticated machines are in comparison large, rare and expensive. But this is not an adequate scale; the largest animal is a basically very simple jelly-fish with a very limited repertoire of behavior patterns, and some quite tiny missiles have a very delicate sensibility for worth-while targets. We cannot overlook, even in the metal, certain powers that are more than algebraic. There are several modern thinkers-and experimentalists-as well as the majority of the ancients, who have felt that these peculiar properties of what we may call immensely complex systems justify the enunciation of special principles, distinct from and perhaps transcending, the laws that permit us to explain and predict the behavior or simpler systems. One of the most distinguished of those recently involved in this dispute is Elsasser(2). This is a very solemn decision to make—we dare not join the ranks of the vitalists unless we are prepared to surrender all our scien- . tific freedoms, and we must consider this challenge seriously. What are the special

powers that make some living things such as ourselves so intractable to physical law? The first that should occur to us is reproduction. This is not the theme of my discourse and we may put it on one side for meditation, but I should like to remind you that organic reproduction is not necessarily replication, and the more complex the system the less perfect the copy of design from one generation to another. Animal breeders would be very happy if this were suddenly not so; they could specify a champion from sire and dam, but if it were not so they would never have had the opportunity to breed the champion stock at all. Charles Darwin, a century ago, was very much concerned with variation in the origin of the species and this uncertainty of reproduction seems rather to have been neglected by those who find the process inexplicable in physical terms. The information transmitted from generation to generation is vast indeed, but highly corruptible-by no means every mating is fertile and many even of our own progeny are monstrous. In the fertile union of human gametes there is embodied only a high probability of human issue-even the sex of the newcomer is just a little blurred, not sharp and exclusive as was once supposed.

I have mentioned this problem only to dismiss it, but in the hope that it may serve to introduce in an obviously relevant and verifiable context the notions of probability and variety which are of paramount importance in the next subject we must consider, the central and practical theme of this lecture, that bundle of concepts and speculations that we may enfold in the terms Learning, Memory, Motivation, Imagination, Originality and Personality.

This is dangerous ground, but we must cross it to reach a firm basis of mutual understanding; so as a physiologist, I choose to rush in where even some philosophers have feared to tread. We have already considered the special complexity of the system we are attacking and the weakness of our traditional tactics. What can we bring up in support? Our first step must be to find out what we can observe and measure and then see how our observations can be welded into some sort of coherent theory or hypothesis. The first process is

sometimes referred to as the Identification of Operational Parameters. What operational parameters can psychobiological research establish by experiment and analysis, and how do these relate to the concepts, abstract or empirical, derived from other sources?

I have described elsewhere the ways in which we have tried to systematise our observations of changes in human brains and bodies during experimental tests of function; we have suggested that the following parameters could be used to classify and correlate such data; Versatility, Imagery, Stability and Ductility. Let us consider some of these. Versatility was chosen as a term to indicate the extent of variation in an organism's behavior, the repertoire of response patterns in a given situation as compared with the repertoire of other individuals. This notion was derived from experimental studies of brain activity and behavior of normal people performing tasks which in effect challenged their powers of understanding and control but left them free to gain control in any way they pleased. The objective evidence of personal variations was from analysis of brain activity computed automatically and repeatedly so as to provide statistically significant figures; this analysis was found to be related to the repertoire of ideas and actions of the individual in such a way that a high variance of brain rhythms was correlated with a large repertoire of behavior, while monotonous, invariable brain activity was associated with a stereotyped and highly specialised habit of behavior. Over the whole range of variation, the "intelligence" of the subjects was high and their personalities were within normal limits by psychiatric standards; this parameter is not related to how well adaptation is achieved but rather to how it is attempted and in how many ways it is achieved. There are obvious relations here to other concepts, for example, to the Pavlovian parameter of "lability" or "volatility, which Pavlov considered high in both strong, choleric or sanguine types of dog and in weak melancholic ones, but low in the strong phlegmatic temperaments. An even more significant and general similarity is to the Law of Requisite Variety enunciated by Ashby (4) and which he again compares with the concepts of Sommerhoff (5) and with the principles derived from the Communication Theory of Shannon (6).

The Law of Requisite Variety states that if a complex system (for example a human being) is attempting to control the outcome of a situation, then that system must have an intrinsic capacity for variety that matches the variety of the situation. This is because "control" means reduction of the number of possible outcomes of the situation to a certain smaller class which are generally described as Good or Correct. In a real complex life-or-death situation a system with the requisite variety will be able to survive by finding an appropriate mode of response, while another with inadequate variety can make fewer responses with a correspondingly smaller chance of survival. In the experimental conditions of our investigations, survival is not at stake. but the situations are deliberately contrived so as to be ambiguous and to offer the subjects several modalities of stimulus and response as a means of avoiding a disagreeable penalty, or achieving formal gratification. Some choose one way, some another, some use parts of all the types of information, some vacillate between one extreme preference and another. This is not surprising or novel, but the important observation is that the character of this response complex is related to the features of the intrinsic and evoked activity in the brain, and to the manner of participation of the involuntary mechanisms mediated by the autonomic nervous system.

Our early experiments on these lines suggested that adaptive behavior of this type, closely analogous to and probably homologous with the formation of conditioned reflexes, is essentially a statistical process, which involves first the selection of relevant information from the background of "noise" or random change, second the storage of the information so selected and classified, and third the combination of the stored select information with fresh events or disturbances, so as to provide a relevant and effective behavioral control. This hypothesis too I have elaborated elsewhere; what concerns us here is the evidence that in human

beings there is a wide variety of detail in the way these processes are carried out. The principles—one might say the mathematical laws—according to which information is selected and stored, are probably universal and ineluctable, but the way in which the principles are applied by any particular nervous system is a very personal matter.

The personal preferences and idiosyncrasies that intrigue us so much in daily life and baffle us so profoundly in the laboratory can be seen even in the mechanical devices we have made to embody these hypotheses. There are at least half a dozen machines in existence which imitate quite successfully the selection, storage and recombination function which we call Learning. All these educable machines exhibit the powers and limitations of an adaptable organism; but all are different in many important respects and these differences are apparent at all levels and stages of their operation. Even within a single artificial species-for example my own Machina docilis-individuals with the same technical specification develop idiosyncratic traits, and these are cumulatively amplified by experience. Some of these differences seem trivial-for example, one synthetic animal may store relevant information as an electric charge, another as a chemical reaction. another as a magnetic field-but such variations are not so trivial if one considers these artificial organisms as forming a community. How is a system that operates with magnetic tape to communicate with another that needs punched cards or flashing lights? Obviously one can make a suitable interpreter, but we know that behind every translator lurks a traitor, and that all organisms tend to consider their own system of reception, storage communication and control the best, if not the only legitimate language.

What I am suggesting is that the variations of brain activity and somatic response we observe in human beings during learning are evidence that, even among those born and raised in the same culture, speaking the same language and facing the same basic problems, there are differences—some at least innate—in their brain language, at least as great as those in their

eye color or their blood groups. We do not attach much importance to these latter traits (though there is evidence that eye color is related to vocational trends, and in our present society, the interchange of tissues by transfusion and grafting is becoming so commonplace that specific immunity reactions are beginning to influence survival—it has been suggested that if radiation sickness were to become an endemic malady the most important factor in survival might be to have an identical twin whose bone-marrow could be used to replace one's own.)

But the nervous system is in a different category of biological importance, and slight discrepancies in operational techniques between individuals may be expected to have profound effects on social interaction and joint activities. Although the physiological approach to personality and social interaction is still in its earliest stages, it is already worth discussing the intimate details of the mechanisms that underly these essential human characters.

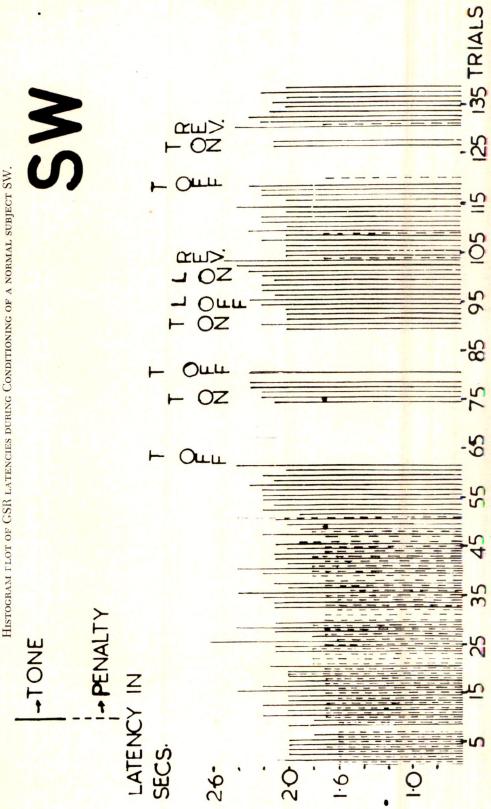
The old idea of the nervous system as a compact but deterministic telephone exchange has long since given place to more sophisticated images based on contemporary engineering and communication. These are less obviously misleading, but really only because the mechanisms of computors, radars and self-directed missiles are less familiar to most of us and may even be officially concealed, and we are only equating two unknowns. Analogies are no substitute for observation though they may-and do-suggest what observations are worth making. I have already referred to the study of the spontaneous or intrinsic activity of the brain as' evidence that the nervous system is not merely a passive network awaiting stimulation; I should like to introduce two other sources of information which may help to outline the nature of individual cerebral vitality.

We tend to take very much for granted the rationality of everyday behavior; few realised until recently how much this depends on our immediate and constant contact with the outside world. The experiments initiated in Montreal by Hebb and his colleagues (7) and since repeated with variations in several centers have shown

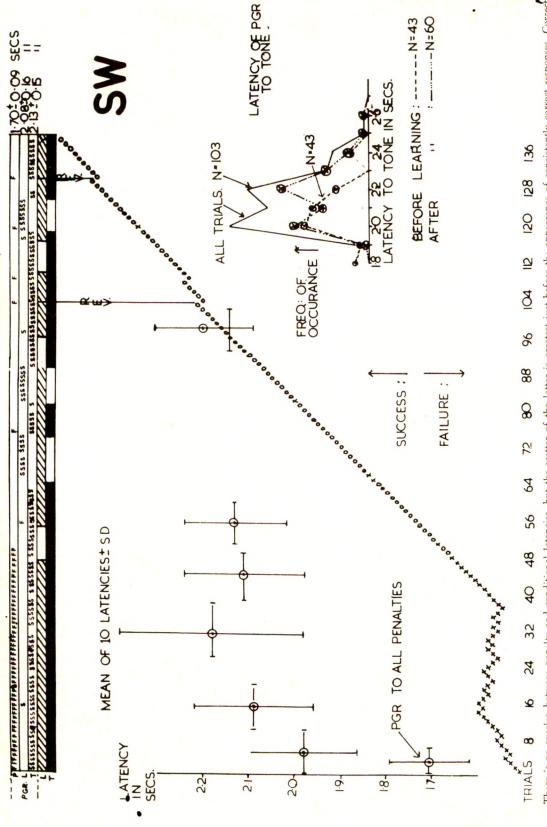
that even quite sane and balanced human beings rapidly lose their grip on reality when the volume and variety of sensory signals are artificially reduced. If we were limited to a telephone exchange model of nervous activity we would have to suppose that when no calls were made for a few hours, all the bells started to ring at random. Whatever its nature, the nervous system cannot sustain a condition of passivity for long—there is a positive tendency to exploration and speculation—which becomes explosive when unrestrained by the pressure of environmental circumstance.

From another source comes evidence of how this restless exploratory ebullience is controlled and modulated, matched to the necessities of survival and the possibilities of control. Again in our ingenuous physiological youth we assumed simply that any environmental change that was adequate to stimulate a sensory end organ would set up trains of nerve impulses in appropriate frequency-modulated volleys which, emerging finally in the specific receiving zones of the cerebral cortex, would inevitably reproduce in some electrochemical form an image or projection of the initial event. Here, in general, the physiologist lost sight of the process, though he might catch it again in the emergence of some response, if he were dealing with a simple situation in which the response was recognisably related in time or character to the sensory event. And of course for many years physiologists restricted themselves and their preparations-by anaesthesia or mutilation-to just those conditions in which this rare and often artificial simplicity was maintained. More recently however, thanks to the introduction of many new techniques in surgery, engineering and biology, it has become possible to observe the subtle and varied relations between external and internal events in entire animals and even in human beings. One of the most significant discoveries has been that external changes, even though they may be quite adequate as physiological stimuli, do not necessarily evoke responses in the central nervous system. In animals, the central electrical responses to a strong stimulus may be almost totally suppressed when the novelty of the event

FIGURE 1 HISTOGRAM FLOT OF GSR LATENCIES DURING CONDITIONING OF A NORMAL SUBJECT SW.



Number of trials are on the abscissa; latencies in seconds on the ordinate. Responses to unconditional penalty stimuli are dotted, those to conditional warning tones are solid lines. Note the consistent brevity of the unconditional as compared with the conditional latencies.



There is no overlap between penalty and conditional latencies, but the scatter of the latter is greatest just before the appearance of consistently correct responses. Correct responses are plotted upward, incorrect downward. Defensive movements are indicated by crosses, anticipatory avoidance by circles.

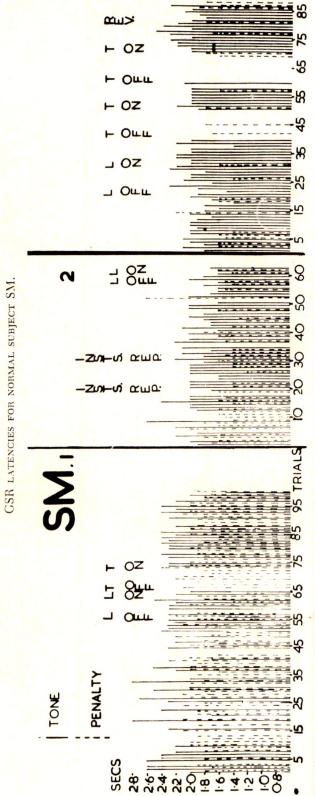
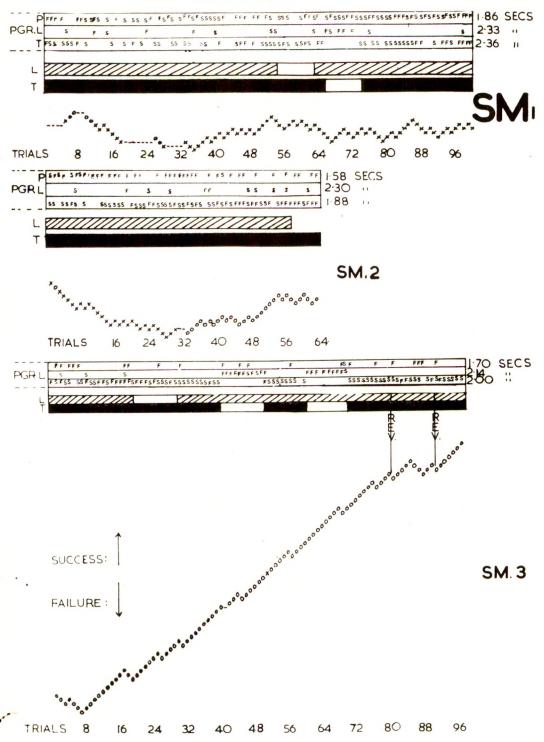


FIGURE 3

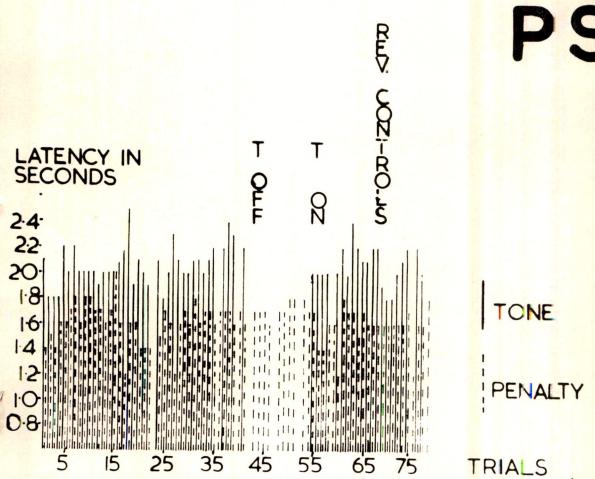
There is greater scatter and overlap between unconditional and conditional latencies at first but the distinction emerges later when correct responses finally appeared

FIGURE 4
Conditioning curves for SM.



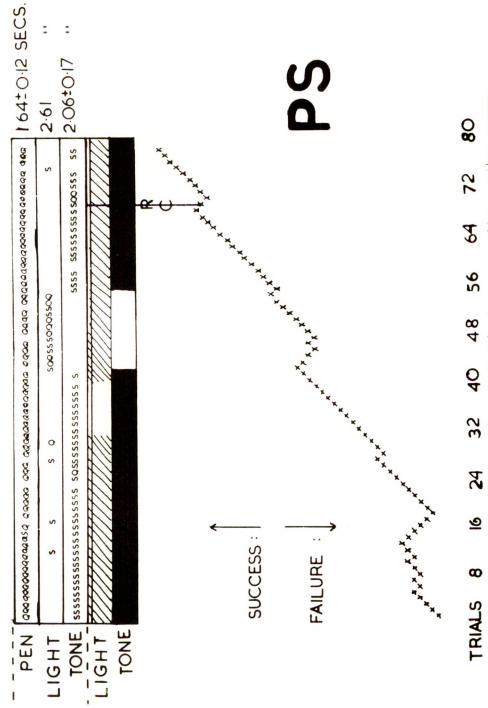
There was no significant adaptation until the third series, after 170 trials.

FIGURE 5
GSR LATENCIES OF PATIENT PS.

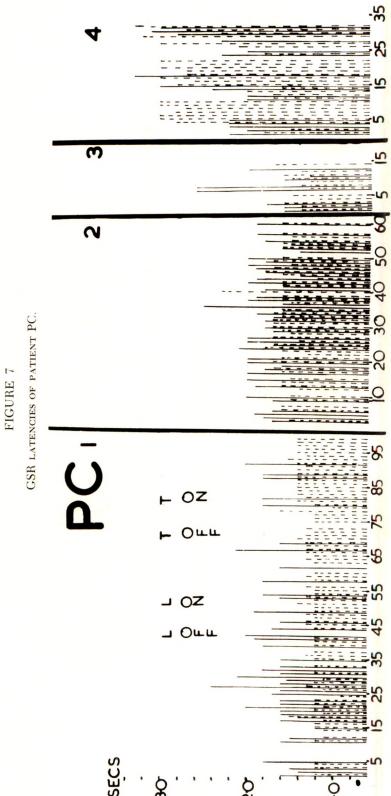


The distinction between unconditional and conditional latencies is clear, but unconditional responses persist since there were no attempts at avoidance responses.

FIGURE 6
CONDITIONING CURVE OF PS.



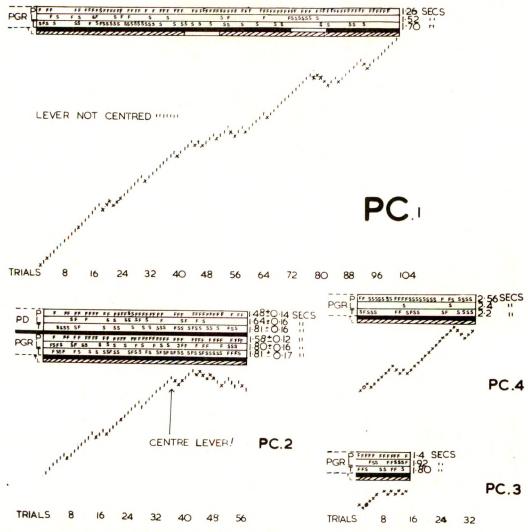
A sequence of correct defensive movements began at trial 19 but there were no anticipatory avoidance responses.



In the first series, before treatment, the latencies are all shorter than normal but the distinction between unconditional and conditional responses is clear. Unconditional responses the subject never attempted to avoid the penalty. After treatment (Series 4) the unconditional latencies are markedly increased, the conditional responses are rare and variable.

FIGURE 8

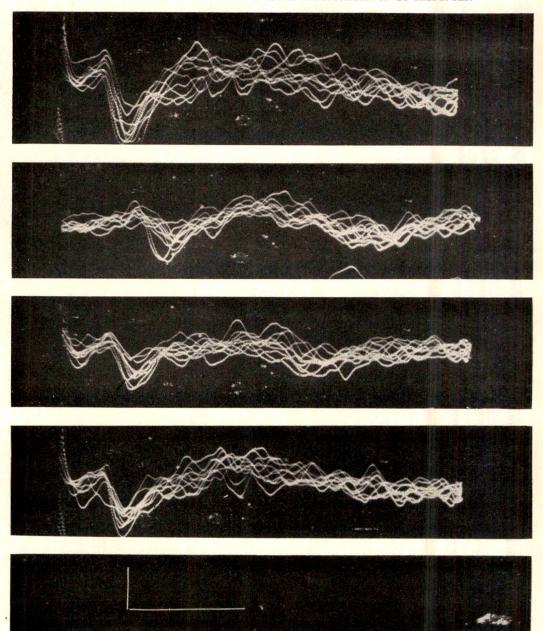
Conditioning curves of patient PC.



The upward trend is misleading—the subject kept the lever on one side and reversed it whenever she heard the penalty (indicated by vertical dashes).

# FIGURE 9

Non-specific generalised electrical responses to visual and auditory stimuli within the frontal lobes of patient PC. Superimposition of 10 responses:



- A. Response to clicks at random intervals at electrode implanted in left lateral frontal cortex.
- B. Responses to flashes at random intervals at the same electrode. Note short latency and constancy of click responses contrasted with longer latency and habituation to visual stimulation. Similar non-specific responsiveness was found in many frontal regions of both hemispheres in this patient.
- C. Effect on responses to combined flash and click of distraction by conversation.
- D. Effect on combined responses of directing attention to the stimuli.

  Calibration: 100 microvolts, 100 milliseconds.

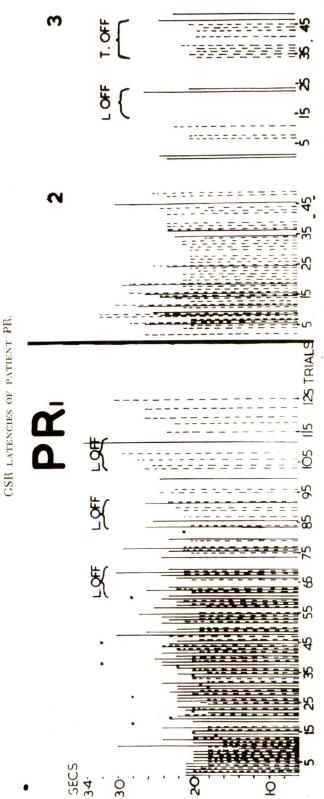
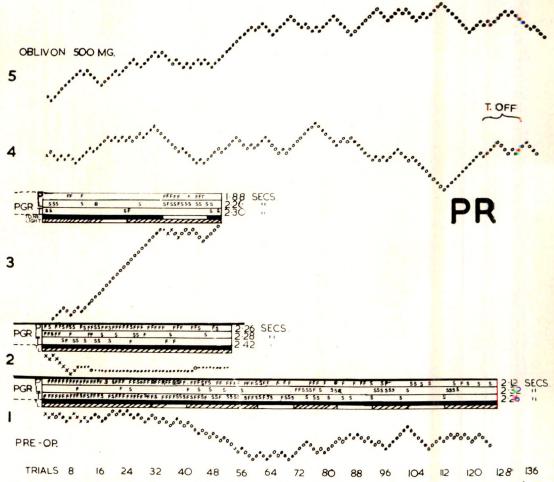


FIGURE 10

In contrast with PC all latencies are unusually long and the distinction between unconditional and conditional responses is less clear. At about Trial 65 the conditional responses disappear and at the same time the unconditional latencies increase from about 1.8 to about 2.8 seconds.

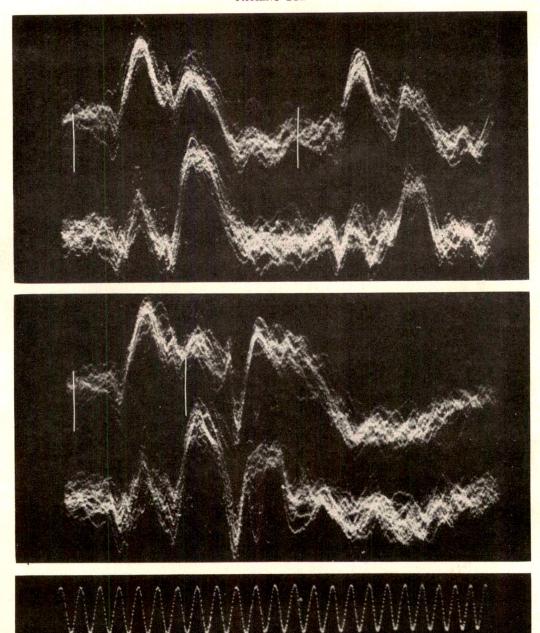
FIGURE 11
Conditioning curves of patient PR.



There was no sign of adaptation over 175 trials. In the first series (before electrode implantation) nearly all responses were anticipatory but quite random and uncorrected by failure. In series 3 after intracerebral polarisation there was a significant sequence of 23 correct anticipations but this was broken by withdrawal of the tone samulus. Later series showed no adaptation.

FIGURE 12

Specific localised responses evoked by random flashes in depths of occipital lobe in patient PR.



These show no habituation but were sensitive to changes in intensity, interval, color, overbreathing and inhalation of CO<sub>2</sub>.

- A. Responses to flashes separated by 230 milliseconds top trace from electrode in optic radiations, lower from electrode one cm. posterior.
- B. Responses to flashes separated by 113 milliseconds. Note the large positive (down-going) pulse that appears with the shorter stimulus interval, and the after-discharge, phase locked to the stimulus. Calibration: 100 microvolts, 50 c/s

wears off with repetition or if the creature is distracted by other events. Contrariwise the response may be augmented when the stimulus acquires significance by association or even minor alteration. This has been shown particularly clearly in animals by Hernandez Peon, Scherrer and Jouvet(8); by Galambos(9) and we have seen these effects ourselves in human beings. The fact of special importance for the subject of this lecture is that this vital control of correspondence between brain and outside world is not an internal reorientation of domestic intracerebral complexities, but a direct, emphatic blockade reaching out even to the receptor itselfa change in Foreign Policy. Again resorting to the obsolete telephone image, it is not that some calls are unanswered but rather that some callers are denied access to the instrument. There is an obvious and significant paradox here: if a brain imposes a strict censorship on a certain class of signal, how can it maintain the blockade without receiving the signals at all?

A verbal explanation of such effects can never be very satisfactory because of the ambiguities of everyday speech and as I have mentioned, in our experience it is far better to make an inventory of the real phenomena and incorporate these in a working model of the simplest possible design in order to see how difficult the problem really is. In experiments now in progress designed to test model hypotheses of habituation and association we have come across some clues to how and where the vital operations of discrimination and selection are performed within the brain.

It is fairly obvious that since the nervous system can and must classify certain events—in fact the majority of events—as insignificant, redundant or irrelevant, then some part of the system must be able to act as a filter, set to reject signals referring to this category and to recognise and accept signals relating to events in the complementary class of significant or novel. In some conditions the nature of this significance filter seems to be quite simple, almost as though it were a physical template or gauge rejecting all signals except those that satisfy certain canons of size or quality with a reasonable tolerance for

random variations. In other conditions the selectivity is so high and yet so peculiar that it is impossible to imagine any artificial mechanism that could duplicate it. What are the differences in these conditions that seem to reflect at one extreme a rudimentary measurement and at the other a cultivated taste?

The nearest we can come to an answer at present is that it is a question of sample size. All our experiences are only samples of the whole universe, and we cannot always decide how representative any particular sample may be. None the less an organism, in order to survive, must as it were, assume quickly that certain small samples of experience are quite trustworthy. When a child is born its respiratory apparatus operates on the inspired assumption (if you will forgive the metaphor) that the first lungful of air is a reasonable sample of the atmosphere. The assumption is embodied in the genetic mechanisms that determine the structure of the infant's brain-stem, muscles and so forth. The compound reflex processes we sometimes still call instincts are the expression of basic assumptions of this sort about the world. In general they are essential to immediate survival and show little variation; they operate rapidly and are unconditional. They operate rapidly because only one or few samples are needed and verification is not required. They also tend to involve quite a large proportion of the organism and some of them are only moderately specific -they are evoked by the general or common rather than the special or unusual properties of the stimulus situation. We know only too well that the instinctive behavior of mammals and particularly of primates is hard to isolate and study and we can only envy the relative ease with which ethologists can analyse the Innate Releaser Mechanisms in birds and fish. However, there is one property of instinctive behavior that seems to identify it even in ourselves-its special relation to the autonomic nervous system.

For some generations now we have been accustomed to consider the sympathetic sections of the autonomic system as a vestigial and rather tiresome heritage from our rude and ingenuous forbears. For us,

an apparatus adapted to fight or flight is an embarrassing reminder of a primitive past—our ideal is to fight only under compulsion and never to flee. Many psychiatric clinicians indeed have asserted that their practice would vanish if sympathectomy were as common as tonsillectomy, and it can be argued that in a culture where tolerance and fortitude are admired, the physiological mechanisms subserving rage and fear are not merely redundant but pernicious. Be that as it may we are literally saddled with this atavistic encumbrance and in our laboratory studies at least we can find a use for it as an indicator of neurohumoral mobilisation.

Only a few of the effects produced by activity of the sympathetic nervous system can be detected and measured on the body surface, and, in the experiments I have referred to, we are in general limited to the most inconspicuous contacts with our subjects. Of the accessible phenomena, we have paid most attention to changes in pulse rate, blood pressure, respiration and skin resistance; there are also of course more subtle and indirect actions on the central nervous system itself but these are so intricate and variable that I shall only be able to report them briefly later. The simplest and most nearly specific effects are, we find, those due to changes in the sympathetic control of the skin organs, variously referred to as galvanic skin reflexes, psycho-galvanic responses and electrodermal reactions. As we all know, this phenomenon has a long, scientific history, as well as vulgar associations with "lie detection." I need not enlarge on the details of this but for those familiar with the technical details I may say that we have considered particularly the changes in skin resistance, the so-called "Féré" effect as opposed to the potential changes or "Tarchanoff" effect; the relation between the two is still confusing. Our technique is arranged so as to indicate at the same time both the absolute skin resistance and the changes in resistance on suitable scales, and we often record changes from several parts of the body at the same time in order . to distinguish between segmental and global responses.

The GSR is—compared with brain activ-

ity—a very simple effect. Typically it consists of a transient fall in resistance of the skin, lasting a few seconds and varying in amplitude according to the state of the subject and nature of the stimulus. The form of the resistance change varies very little but its latency does show significant variations and it is this factor that we have found of particular interest in relation to problems of habituation and learning. Again compared with central nervous effects the latency of the GSR is very long: about 2 seconds is the figure usually quoted. A large part of this latency is due to the very slow propagation rate in the sympathetic nerve fibres; responses in the foot occur about one second later than those in the hand, and the propagation velocity is only between 1 and 1.5 metres per second. As well as having a longer latency, the more distal responses are also more sluggish and prolonged, suggesting that they are evoked by a protracted heterogeneous train of impulses rather than by a synchronous volley.

In our experiments with human conditioning, three types of stimuli are presented; a gentle warning tone of high or low pitch, a flashing light giving triplet or doublet flashes (these are neutral stimuli later to be conditional ones), and a painfully loud penalty sound which the subject can stop or avoid by moving a lever to the left when the low tone and doublet flash are presented, to the right following the high tone and triplet flash. The subjects have to discover this association for themselves -they are given no explicit instructionsbut the penalty is disagreeable enough to provide a powerful incentive to succeed, and it evokes large consistent GSRs; it is in effect the specific or unconditional stimulus. The warning tones and lights also usually evoke GSRs, particularly at first, and in the course of a conditioning experiment we therefore record some hundreds of GSR deflections. In our research group it is my wife's task to measure and analyse the records, and in going through the traces of autonomic variables to calculate the average GSR latency, she noticed a peculiar relation between the latency of the GSR deflections and the nature of the stimuli. The GSR following the UCS (the penalty noise) had a short latency, about 1.7 seconds in the hand of a particular subject (SW), while those following the neutral or conditional stimuli (the tones and lights) had a much longer latency, about 2.1 seconds. When both sorts were averaged, the mean came to about the accepted figure of 2 seconds but in fact there were two distinct populations of GSR; the distribution was bimodal, with almost no overlap between the two categories. The clear distinction between these two types of GSR can be demonstrated very clearly in a histogram when latency is plotted on the ordinate and number of trials on the abscissa: the unconditional responses to penalty are shown as dotted lines and those to the conditional stimuli as solid ones. (Fig. 1) In a normal subject all the dotted lines end around 1.7 seconds whereas the solid ones extend from 2.0 to 2.2 seconds. These differences may not seem very impressive (though they are highly significant statistically), but these responses are in the hand which is about a meter away from the central nervous system by way of the cervical sympathetic ganglia and from the observed latencies we should subtract about one second for peripheral propagation time. This leaves 0.7 and 1.2 as the unconditional and conditional latencies; we may say that the sympathetic responses to the conditional stimuli take nearly twice as long to emerge from the brain as do those to the unconditional stimuli. During the conditioning of a normal subject the GSRs to the UCS of course disappear with successful avoidance of the penalty, but the responses to the conditional stimuli remain long in latency though they generally become more variable at about the time that signs of learning appear. (Fig. 2)

As far as we can see the acquisition of the novel relevant response in normal persons takes place in 4 stages; the first corresponds with what Pavlovian workers call Extinction of the Orientation (or Orienting) Reflex. At this stage all the stimuli are fairly novel and equally likely to be significant; all may evoke GSRs, the tone is usually followed by some reduction or even suppression of the alpha rhythms in the brain (if there are any), the pattern flicker evokes its characteristic replica re-

sponse in the visual areas, often combined with synchronisation and phase-locking of some alpha component, and the penalty noise evokes a general startle response, including alpha arrest, a muscular jerk, acceleration of the pulse, a gasp and often an exclamation of pained surprise. The instrumental response is a single reaction, an abrupt movement of the control lever, which may equally likely be in the correct or incorrect direction. From here on the development of the responses is a highly individual matter, but in most normal subjects the next stage involves a series of trials and errors; the physiological responses to the neutral stimuli show some signs of habituation but the startle response to the penalty persists; there is usually no attempt at avoidance or anticipation, the lever being moved only after the penalty is received, as a defense mechanism. It is easy to illustrate this graphically, the number of trials being along the abscissa, correct responses plotted in an upward or positive sense and incorrect ones downward. Thus, when the responses are random, the learning curve will tend to remain horizontal since there will be an equal number of upward and downward deflections, while a series of correct responses is seen as a curve rising at 45°. Defensive responses, that is those made after the penalty, are plotted as crosses, avoidance responses are shown as circles.

In the most straightforward normal subject (SW), an intelligent, self-confident young engineer of wide interests, the first responses were quite random and the curve remains horizontal, but at the 38th trial there appeared a series of 10 correct defensive responses, a run of successes extremely unlikely to be due to chance. At this stage of successful defence the pulse rate, which had risen from 75 to 110 at the beginning of the experiment had fallen to 85 and the GSRs to the light (which were rare even at first) had disappeared, suggesting that the subject was being guided by the pitch of the warning tone rather than by the flicker pattern. Accordingly the flicker was omitted at the 48th trial, which evoked a correct defensive response, and at the next. trial appeared the first correct anticipatory avoidance response to the tone followed by

5 further avoidance successes. The flicker CS was then re-presented with the tone which still served as a clue to correct defence. After a sequence of 10 more successes, the tone was omitted and the next two responses, though correct, were not anticipatory, but after this, correct defensive anticipation was evoked regularly by the flicker patterns alone. When the tone was re-introduced however, the response was made to this, the first CS, rather than to the light, and when the tone was again withdrawn there was a single failure to anticipate, but from then on only one error was made, accompanied by a deep sigh and theta rhythm in the EEG. Altogether 100 trials were needed to perfect this very simple response adaptation. The completeness and certainty of the response were tested by arbitrary reversal of the control rules; inevitably the response to the first trial under the new rules was wrong, but at the second the subject reversed his own procedure and made no mistakes, though the instrumental response time was almost doubled, from 0.8 to 1.5 seconds for the next few trials. The sudden reversal of rule not only provoked the inevitable unconditional GSR but a pulse acceleration from 75 to 90, a series of gasping respirations, and a slight shortening of the conditional GSR latency to subsequent trials. Further reversals and presentations of tones and flicker alone showed that the subject was now in complete control of the situation and after 139 trials the EEG began to show signs of drowsiness and boredom so the experiment was terminated. In spite of his complete operational success the subject gave a very inaccurate description of the experimental arrangements. His subjective estimate of the time taken for the whole experiment was 14 hours instead of 24 hours; he was convinced that the aim of the experiment was to muddle him; he described two types of penalty, both very unpleasant, and was sure that the presentation of high and Low tones and "fast" (triple) and "slow" (double) flashes was in some significant sequence such that he should move the · lever to the right after a sequence of three low tones. He admitted he began by random responses but said he kept trying to

catch the sequence of signals but lost it later. In fact, of course, the order of presentations was random throughout and he only began to succeed when he "lost" the sequence. This search for significant sequences is quite typical and indeed almost invariable; in these particular circumstances it is of course quite futile and indeed eliminates any chance of success. Some subjects who end by responding quite correctly and quickly are still convinced that they are following a sequence which somehow they cannot quite describe.

Returning to the distinction between unconditional and conditional GSRs by latency we can see in this typical normal subject that never at any time, even after an unexpected and complete failure, were the conditional GSRs as short in latency as the unconditional ones and further, the unconditional responses were just as large and quick at the end of the experiment, when the controls were reversed, as at the beginning. We may infer therefore that, however this subject, as a representative of a normal population, may have interpreted his experiences, his nervous system was capable at all times of discriminating between events requiring rapid and unconditional response and those of more doubtful and conditional import.

We may now consider the behavior of other subjects, in order to see how these observations may illuminate some of the mental aberrations and anomalies of interest to psychiatrists. Before describing strictly clinical applications we may glance at two subjects whose conditional behavior is on the borderline of normality.

The second subject, (SM), is a normal man, a scientist from a country in Europe noted for its war-scarred history and spirited intransigence. For this subject the brief instructions given before the experiment were even less helpful than for most people because of his limited English; he was rather tense and apprehensive, knowing something of the general purpose of the experiment and feeling on trial. A glance at the plot of GSR latencies shows how this state was reflected in autonomic terms. (Fig. 3) There was a wide scatter of the conditional and unconditional latencies and there was some overlap between them.

As the experiment progressed the scatter diminished and the pattern approximated to that of the normal subject. The learning curve, however, has a different story to tell; there was a long monotonous series of failures with no attempt to anticipate or avoid the penalty. (Fig. 4) The experiment lasted so long and the experimenters themselves became so exasperated by the endless succession of penalty squawks (which are repeated to the observation room) that the instructions were repeated and later a recess was called and the procedure resumed after lunch when further exhortation was provided in the form of emphatic repetition of the instructions which imply that the penalty can be avoided. After a total of 132 trials the subjects began to perform anticipatory responses, but without significant success until trial 170, from which point his attainment paralleled that of the first subject, with appreciation of both visual and auditory conditional stimuli and quick adaptation to control reversal. This subject also sought for sequences, and tried to pick up time interval clues by counting his own pulse. Since this varied from 77 to 114 during the various phases of the experiment his estimates were not only useless but grossly inaccurate.

It is striking that, comparing these two normal healthy young men of similar intelligence and alertness, provided with the same information in the same situation, one should take over 4 times as many samples as the other to establish control over a very simple mechanism. If the consequences of failure had been serious—for example if the control lever had been the control column of an aircraft, it is obvious that the first subject would have had a much higher chance of survival than the second whose "nerves," evidenced by his autonomic lability, were responsible for much of his early failure, leading to later despondency and defeatism, alternating with over confidence and futile ritualistic obsessions. It was not until the autonomic responses had settled into unconditional and conditional categories that distinction could be made between novel neutral and significant stimuli.

How we assign to these effects their correct status as causes and effects, and whether we consider the behavior of the second subject during his 170 failures as pathological or as a normal deviant, we must discuss later.

Further toward the pathological extreme is a young male patient (PS), considered as an inadequate psychopath, plausible, ingratiating, ineffective, and prone to solving social difficulties by elaborate lies amounting to confabulation. His GSR plot shows at first a close similarity to that of the successful normal subject SW (Fig. 5). There is a clear latency difference between conditional and unconditional responses, with no overlap; the means of the two classes are exactly the same as in the first subject. A glance at this histogram however, shows that something was seriously wrong; the dotted lines representing the penalty responses continue throughout the experiment, while in the first subject there were none after trial 48 when the avoidance rule was learned. This of course means that no avoidance was attempted by the subject and the story is filled in by the learning curve, which shows not one single circle, no attempt to avoid, only accurate and rapid defence from trial 19 (Fig. 6). This subject was able to associate either or both CS and made only two errors when the controls were reversed at trial 69. The subjective report of this subject showed that although he too expected a sequence of stimuli, he finally appreciated the meaning of the CS patterns, but in effect could not be bothered to avoid the penalty by an anticipatory response since he could not be sure that the penalty would occur until he heard it. It is tempting to translate this behavior into terms of pathological ethics -one cannot be sure that an action is wrong until one is punished for it.

We may now survey two patients exhibiting advanced mental pathology to illustrate how the learning and autonomic mechanisms can reflect total failure of control. The first patient, PC, was a woman of 36 with a 12 year history of compulsive thinking associated with fearful delusions with insight. No treatment, either physical or psychological had been effective, and she was referred for implantation of intra-cerebral electrodes and eventual psychosurgery.

Before operation her autonomic responses were extremely brisk and overactive; this is reflected in the histogram of her GSR latencies (Fig. 7). The distinction between unconditional and conditional responses is clear, but all the latencies are very short, about 1.2 and 1.7 seconds instead of 1.7 and 2.1 in the normal subjects. Here again, the unconditional responses persist through 100 trials—there was no attempt at anticipation or avoidance. The learning curve looks guite different from that of PS however: it appears to mount at 45° straightaway but this is misleading and the curve is made up not of crosses (selective defense movements) but of vertical dashes, indicating that instead of centering the lever after each trial, the patient held it hard over on one side and moved it across to the other whenever the penalty occurred (Fig. 8). This tactic ensures that the penalty be received on half the occasions and that the response involve the slowest and largest possible movement. In effect the conditional stimuli were not used at all, although they evoked autonomic and EEG changes. The warnings were assigned no significance and the patient manoeuvred herself into an extreme situation from which she could extricate herself only by extreme action at a primitive leve.

The procedure was repeated 5 days after surgical implantation of 68 intracere-bral electrodes. Her general condition was unchanged and her behavior in the conditioning situation was similar. After 36 trials she was told positively to center the lever, after which her response curve became quite horizontal indicating a purely fortuitous series of responses. The only detectable change was in the GSR latency which showed a slight but significant increase to both conditional and unconditional stimuli.

During this period very detailed records were being taken of the intra-cerebral electrical activity, using a number of techniques to clarify both intrinsic and evoked activity. An account of these observations would form a lecture in itself, but one set of records is of particular relevance; it was discovered by chance that over wide regions in the depths of the frontal lobes in this patient there were non-specific elec-

trical responses to a variety of sensory stimuli (Fig. 9). These could be evoked by sounds or by visual stimuli and their latency was quite short: 25 m. secs. for auditory clicks and 34 m. secs. for visual flashes. The responses to visual stimuli showed a marked tendency to habituation after 10 to 20 flashes, but the auditory response persisted unchanged over a series of scores of clicks when there was no concurrent stimulation. When a click was accompanied by a flash, the click response was prepotent, but even the combined response was attenuated during distraction by other stimuli and both click and flash responses were augmented when they acquired extra significance as conditional stimuli. The most striking features of these responses were their very wide dispersion, particularly in the lateral frontal regions of both hemispheres, and their characteristic form—a sterotyped pattern very similar to that found in specific projection regions. Yet these effects were in parts of the brain as remote as they could be from any specific receiving zone-generally the most tacitum of the so-called silent areas.

Recalling what we have said about the need for a high and controllable selectivity in the learning brain, we see here evidence for just the opposite, an indiscriminate over-responsiveness, in which everything may mean anything in general and nothing can mean anything in particular. We may presume that the brevity of the autonomic delay and briskness of the responses were also a reflection of the same lack of selectivity and discernment.

As well as being used for recording, the implanted electrodes were used for progressive electrical polarisation within the brain and to achieve a limited and reversible leucotomy. After the first trials of this method, which was followed by a rather dramatic loosening up of the patient's tension and delusional fears, the conditioning procedure was repeated for the third time. On this occasion the patient kept the lever central and made one correct anticipation followed by several correct defensive responses, but she broke down in tears after 14 trials during which there were signs of severe autonomic disturbance. The polarisation treatment was continued in empiri-

cally identified brain regions; this was followed by marked general improvement; the delusions disappeared and the patient became quite cheerful and active. The fourth conditioning experiment reflects this change in two ways; the GSR latencies were greatly increased (those to penalty from 1.26 to 2.56 and to tone from 1.7 to 2.2 secs.) and the learning curve shows an appreciable gain by defensive conditioning over 32 trials. The autonomic changes were minimal. The patient was discharged on probation at this stage, and her subsequent history, though checkered, has confirmed the apparent relation between her mental state, her neurophysiology, and her learning ability.

The second patient PR was studied in similar detail. She is a woman of 60 with a life-long history of migraine overlaid by 30 years of hysterical extension of the syndrome. Her complaint had resisted all therapy, including prolonged psychoanalysis and physical treatment, and her morale had broken during the last 3 years with depression to a suicidal degree, so that she was referred for intra-cerebral exploration with a view to psychosurgery. Before implantation of the electrodes her behavior during conditioning was in striking contrast to the other patient PC though she also failed completely in associative adaptation. The chart of her GSR latencies shows at first a reasonable distinction between unconditional and conditional responses though all the latencies are rather long (Fig. 10). The conditional responses to tones faded out after about 80 trials and at this phase the latency of the unconditional responses to the penalty began to increase and they also diminished in abundance. This effect was so marked that the average latency of the last 10 unconditional responses is significantly greater than that of the first 10 conditional ones; these changes can be seen particularly clearly when the two types of response are plotted separately. The learning curve is unique in our experience: it shows a completely random response, ending slightly below the starting level (Fig. 11). The nature of the response is quite peculiar-from the 13th trial to the 125th all the movements were anticipatory, but were entirely at random, and once the

lever had been moved to one side it was left there whether or not the penalty occurred. In this way the patient ensured that she received the largest possible chance number of penalties for the longest possible time. A scalp EEG taken just before the conditioning experiment had shown a dramatic frontal spike response to flicker, but this disappeared and during the experiment there were elaborate multiple responses to pattern flicker in the posterior brain regions, but no indications whatever of diffuse response (Fig. 12).

The experiment was repeated later on the same day with further exhortation and encouragement and on this occasion after 11 trials, 22 correct anticipatory avoidance responses were made. At this stage the GSR chart showed reduction in average unconditional latency to 1.88 secs. and distinction between this and the conditional latency. Omission of the light CS had no effect but omission of the tone resulted in random responses. This suggests that in spite of the clear specific responses in the visual pathways, the visual information was assigned no associative significance.

During this period the intra-cerebral electrodes in the orbital regions of the frontal cortex showed profuse persistent. delta rhythm attributed to local electrode lesions. The mental condition of the patient improved and remained excellent for some weeks, but she regressed in spite of polarisation of selected frontal sites. The conditioning experiment was repeated on two occasions two months later and showed reversion to the original pattern. In a total of nearly 280 trials all were random anticipations, in spite of emphatic repetition of instructions. At this time the frontal delta rhythms had subsided and the EEG responses to stimulation were stereotyped and restricted to the visual regions.

The varied and detailed studies of these 5 human beings have been chosen to illustrate and justify the title of this lecture; in all our mental life what happenings are more vital than the incessant meshing of stored and new experience to drive us on to fresh dangers and discoveries? And what, in the puppet theatre of our laboratory could mimic more closely the tragic breakdown of this mechanism than the to-

tal failure of the two patients to control by the twitch of a muscle a situation which could be mastered in a few attempts by the humblest experimental animal? Where, we must still ask, do these vital things happen and where should we seek the cause and cure of their decay? The complete answer may always elude us—we have no prior knowledge that there is an intelligible answer, or that we can frame a proper question, but in the observations I have outlined, some pattern seems to be emerging.

In normal human beings, uncorrupted by scholastic tyranny, and capable of exploratory control as well as internal regulation, we can identify two main necessary and sufficient conditions for free life. First, the preservation of a brisk and buoyant autonomic system specialised for-but not limited to-the urgent adjustments of the somatic springboard of action. I have deliberately restricted my account of these adjustments to a few of the simplest and most superficial changes. You will realise that these are but the outward expression of a delicate and personal intimacy between the border regions of the primitive and ancient brain structures, the limbic cortex, and the great mass of tissue in the still youthful external crust of brain, whose evolution has occupied only the last few seconds of the eleventh hour of living time. It is these intra-cerebral relations that most concern us, rather than the external changes they promote, for the alterations in body state are in a sense trivial or at least adventitious. We have seen that the mobilisation of the autonomic allies for cogent action takes some time—a long time by the brain clock that ticks in thousandths and chimes in tenths of a second. This pause, we must suppose, in the normal way is for reflection—not of course necessarily for conscious thought in any useful sense, but for selection and identification of novelty and significance. The second of the two necessities I spoke of are the cerebral mechanisms underlying just these basic processes of cogitation and we can see that here again the necessary sites and structures announce themselves. In a quite novel situation, any prior assumption about likely contingencies may be fatal, so all

signals must be dispatched to all departments-"for information only." In physical terms this means that the nerve impulsesset up by unfamiliar sensory stimulation must be coded, sorted and relayed to widely dispersed brain regions in a form which will ensure attention but restrain action, while not impeding or interrupting work in progress. The recent and revolutionary studies by Moruzzi, Magoun(1), Jasper and their colleagues have demonstrated how and where these essential, subtle functions can be performed; there are in fact neural mechanisms for the broadcasting of sensory information within the brain—the diffuse, non-specific radiations from the reticular formations in brain-stem and thalamus. In animals the functions of this system have been rather vaguely described as "arousal" and "alerting"; I am suggesting that though they may be non-specific in their projections, these functions are quite specific in their relation to behavior and particularly to learning.

We still lack much essential information and there are surely wonderful discoveries still to be made; it would be wrong to make dogmatic assertions but precise hypotheses we must have if our discoveries are to be of more than academic interest. I suggest that, from such observations as I have described here we can envisage at least three basic functional sub-categories or modes of central nervous action related to mental action, all involved with and depending on the basic neuro-humoral operations of the autonomic system.

First, there are the unconditional responses to specific stimuli which I still consider legitimately as instinct in the literal if not the literary sense. Most of these responses are quite elaborate and may involve nearly all organs, but they require neither discrimination nor internal reflexion though they are reflexive in their mechanism. They must therefore depend upon a diffuse transmission, not to the cortical levels so much as to the hypothalamic and autonomic effector pathways. These responses are brief in latency, stereotyped in pattern and usually reinforced and protracted by hormonic support, particularly from the adrenal glands. The role of these response patterns is of course

mainly homeostatic and their variety is limited—by evolutionary necessity—to match the limited number of predictable environmental changes likely to be encountered by any particular species. This may seem to contradict the suggestion that these aspects of behavior are related to mentality, but we should recall that even the most fundamental and primitive action of all -respiration-is so closely linked with thinking that our Mediterranean ancestors attributed to breathing movement much that we would describe as mental activity; hence we derive all our words containing the syllable-phrene-. No one would suppose that schizophrenia was due to a split in the diaphragm but in records of respiration we can trace quite easily clear associations with mental state, and we should be reassured to recall that the respiratory centres are anatomically embedded in that reticular formation to which we must assign so many essential properties.

Next, are the responses to novel and apparently neutral stimuli. In contrast to the unconditional homeostatic processes these are an expression of orientation and invention since they are not programmed in any useful sense and must involve much more elaborate neural mechanisms. They are easily confused with instinctive responses because they have many common effector pathways, particularly in autonomic outflow. The distinction between the two can be made only by careful observation of the time relations of the central and peripheral effects and the alteration of the responses with the passage of time. The most important distinction is, of course, that the response to novelty must involve widespread cortical diffusion of signals, whereby the degree of innovation can be recognised. This is the process, presumably, that takes time; the central files and records, whatever they may be, must be searched and scanned for similar events and a preliminary entry must be made if no trace is found of the dubious experience, which, for good or ill, must be tentatively classified in some way until further information is available.

The third category is the one to which we have paid most attention; the selective sorting of consecutive or related events so as to construct within the nervous system a working model of the outer world with enough detail and accuracy to permit coherent and relevant actions of control. We have seen how vulnerable these mechanisms are—they may fail altogether in people who are still capable of a nearly normal existence in protected environments. Since they require a great versatility of cerebral performance, the widest possible repertoire of functional configurations, failure in these processes can occur in any number of ways. As we have seen, they may fail by overemphasis within the brain of broadcast information, the deadening by incessant propaganda of individual character, or by blockade of the normal services, by censorship without discrimination or appeal. They may also of course be grossly perturbed by overaction or degeneration of the mechanisms subserving instinct or innovation-this too we have seen in individual subjects.

For many of us the new intricacies of psychobiology are beyond our mental grasp -none of us I think can yet appreciate in its full grandeur the panorama of mental physiology as revealed in the oblique light of dawning revelation. We may find in social parallels some analogy to the potential freedoms of the cerebral community. In searching for the model of the democratic ideal we need not look as far away as Athens or Westminster-within our heads we carry the free society, for we find no boss within the brain, no oligarchic ganglion or glandular Big Brother. In this small space our very lives depend on equality of opportunity, on specialisation with versatility, on free communication and just restraint. It is here that vital things have their beginnings and their developments and it is here too that cur proper studies should begin.

Recalling again Meyer's expostulation "I wish it were possible to get rid of the words"—we may well feel our intellect is being swamped and suffocated in glutinous phraseology—these Greco-Latin hybrids such as "psycho-physiology" may be the sterile offspring of a marriage of technical convenience. But I, hope that in these glimpses of our newborn offspring we may

recognise the natural and fertile issue of a union of passionate necessity.

One of the most satisfying aspects of this sort of investigation is the need for real team-work, depending on complementarity of training and aptitude, collective responsibility for the general strategy, and delegation of operational authority. In the experiments described here, Dr. H. J. Crow is responsible for all clinical applications and interpretations, Dr. R. Cooper for solution of the physical and technical problems, my wife, Mrs. Vivian Walter and Mr. Arthur Winter for management of the experiments and Mr. W. J. Warren for the construction and maintenance of the equipment. In addition, it is a pleasure to acknowledge the close co-operation of our surgical colleagues, Mr. George Alexander, F.R.C.S., and Mr. Douglas Phillips, F.R.C.S. An essential member of any such team is what is sometimes called a non-playing captain, who can see the whole situation with detachment and perspective; in this capacity Professor Golla has for many years inspired and directed these investigations.

The research reported in this lecture has been sponsored in part by the Air Force Office of Scientific Research of the Air Research and Development Command, United States Air Force, through its European Office, under Contract AF 61(514)-1178.

### **BIBLIOGRAPHY**

1. Magoun, H. W.: The Waking Brain. Springfield: Charles C. Thomas, 1958.

2. Elsasser, W. M.: The Physical Foundation of Biology. London & New York: Pergamon, 1958.

- 3. Lief, A.: The Commonsense Psychiatry of Dr. Adolf Meyer. New York: McGraw Hill, 1948.
- 4. Ashby, W. Ross: An Introduction to Cybernetics. London: Chapman & Hall; New York: Wiley, 1956.
- 5. Sommerhoff, G.: Analytical Biology. Oxford, 1950.
- 6. Shannon, C. E., and Weaver, W.: The Mathematical Theory of Communication. Urbana: University of Illinois, 1949.
- <sup>\*</sup>7. Heron, W., Bexton, W. H., and Hebb, D. O.: Amer. Psychol., 8: 366, 1953.
- 8. Hernandez-Peon, R., Scherrer, H., and Jouvet, M.: Science, \$23:331, 1956.
- 9. Galambos, R.: L. Neurophysiol., 19: 424, 1956.

# DISCUSSION

Lawrence S. Kubie, M.D. (New York, N. Y.)—Rarely have I had a more challenging, fascinating and difficult assignment. Two streams converge in this lecture. The headwaters of one derive from Adolf Meyer, who foresaw that the subtle complexities of human psychology would be explained in neurophysiological terms only when these became more subtle and complex than what Meyer used to refer to scornfully as the "neurologizing tautologies" of his day. He foresaw that "Where vital things happen" could be explained only by a neurophysiology with a new subtlety and a new vitality. This is precisely what we have had the privilege of hearing this morning.

It fascinated me to discover how adroitly W. Grey Walter has walked the tightrope between vitalism and the ultimate in mechanistic philosophy. Indeed it brought to mind a scene from earlier years at the Hopkins. The ancient, medical amphitheatre was filled with students who had come to hear the famous and by that time aging biologist, Driesch. Introducing him was "Popsy" Welsh, no longer young himself, portly with his halo of white hair slipping down below his occiput to ring his bald pate, but with all feet firmly planted in the good earth of science. I can hear him growling a bit as he said, "Of course there is a tendency on the part of many to feel that when a scientist becomes a philosopher he must be verging on that inevitable fate which we call the senilium." Then with a quick look at the guest of the occasion he added hastily, "But of course we don't have any such feeling about our honored and famous guest." So I look at my friend; but no matter how carefully I scrutinize him I cannot find a trace of the senilium here: so I can say with Popsy Welsh that no such idea crossed my mind for a moment, as I contemplate our honored guest. And the fact stands that in his lecture he skirts the precipice of mysticism without once letting his foot slip; and I for one found it delightful to watch him do it.

There are more serious matters to be considered however: and many penetrating and imagination-stirring phrases.

I would call your attention to the distinc-

tion he draws between the classical method of science, which depends upon the isolation of a single variable in large scale simple systems, and the contrasting logic of contemporary physics, where the method of science has become the "application of highly refined and abstract notions of probabilistic interactions between unidentifiable elements in complex systems." This throws a light on the essential challenge with which the effort to integrate neurophysiology and psychology confronts us; because in psychobiology, as he points out, we have large scale and complex systems, which are made up of heterogeneous and not homogeneous elements; and unlike the cells of the bloodstream they do not interact in parallel but freely, and with an almost infinite variety of interconnecting patterns. If one considers the 10,000 million neurones in our nervous system, and the number of patterns in which their connections can be arranged, the possibilities become not only immeasurable but almost inconceivable, even by that superlatively equipped apparatus, the brain itself.

Then he points clearly to the basic scientific significance of psychoanalysis, seeing with extraordinary perspicacity that the essence of its technique derives from the laboratory rather than the clinic, and that its observational situation is so designed as to ensure that information will flow predominantly from the complex system which is under scrutiny to the observer and not in both directions simultaneously as happens in all other human interactions. It is highly significant that without sacrificing one legitimate skeptical doubt our gifted lecturer can characterize so clearly the essential position in science of psychoanalytic methodology. I might add that even among analysts there are not many who do so, and that he is one of the few among experimental physiologists who has this understanding.

Glider planes happen to be our lecturer's preferred method of personal transportation; and he uses them much as the cat in the fable used his seven-league boots. Thus his next great glide is to explain why models are the best means to close the bodymind gap. With words which are poetic

in their economy and clarity, he points out the advantages of the model: that it is always and frankly an analogy, that it either stands or it breaks down, but that when it breaks it breaks clean. "They shear with a clean snap and do not yield and flow as words and phrases do." Never have I heard the ultimate difficulty of all psychologizing more pungently expressed. All psychologies depend uniquely upon words. Yet words are as treacherous as quicksand. They "yield and flow" when we put our weight on them, molded by our prejudicies and partisan feelings. And we are worse than Tweedle-Dum and Tweedle-Dee in Alice. We make them mean whatever we want them to mean, without even paying them extra. And this we cannot do with the model. Thus without laboring the point, he makes clear the basic technical philosophy that underlies the use of models in the effort to bridge the gap between physiology and psychology.

But then, unhappily and inevitably moments come when he too has to use words, and he illustrates the very treachery of words which he deplores. Thus when he describes what models have been able to do, he speaks of "goal-seeking behavior," "self-regulation and self-repair," "appreciation of optima," of "logical decision," "free choice between equally probable objectives"; the "identification of self," the "development of personality," the "formation of cooperative communities," the "modification of behavior by experience." Here I have to ask whether his words are not now flowing and yielding under his weight, whether these are actually identities or mere analogies, or at most a spectrum of complexity; and whether the spectrum exists with continuity or discontinuity still remains to be demonstrated. Surely it is not entirely an accident that it is precisely at this difficult point that the issue of vitalism rears its tempting and uneasy

I must ask some more questions. It is true, of course that he can make a machine, his "Machina docilis," that can learn certain things. It can select relevant information from random input, called "noise." It can store and classify this information and it can re-combine it into new combina-

tions. And the machine shows some individual idiosyncrasies.

But equally important are the things it cannot do. Is there any individual machine which can develop an obsessional work block, potentially capable of doing great things but capable none the less of dawdling? Can he make a machine that would fantasy action instead of action? Can he conversely make a machine with a repetitive and insatiable (i.e. compulsive) learning drive or a need incessantly to do instead of to fantasy?

Or let us take another step. Can he make a machine which would experience and even communicate something similar to elation if it succeeds, or to depression if it fails? Even more important can he make a machine which will react to failure with elation and with depression to success? Has he a machine which will play truant from school, substituting other forms of misbehavior like a juvenile delinquent or for that matter like a senile delinquent.

These are some of the limitations of the machine models; and they should be borne in mind even as we are impressed by their extraordinary versatility.

Then he swoops again, this time to the question of how to classify the subtle qualities and functions of which this extraordinary and almost infinitely complex machine is capable. Here his basic verbal tools are the concepts versatility, imagery, stability, ductility, out of which he must derive learning and memory and motivation and imagination and originality and personality. I must challenge him here again; because suddenly we meet another word which gives me pause. I have never been sure that there is such a thing as personality—not at least as a Ding-an-Sich. Is personality a quality, a function, an attribute which is in a person? Or is it an intuitive, highly colored (or discolored) impression which exists only in the eye and mind of the beholder, a different one in the mind of each beholder? A nice question this, when we stop to think of the reams of paper and ink and experimental work which have been devoted to efforts to define and measure something which may not even exist as such. Consider only the number of Ph.D. theses which have been written on

this elusive topic! Perhaps it has eluded our search precisely because it is an abstraction which has no more claim than a Unicorn to existence as a definable unit. William James pointed out many years ago that Consciousness is an abstraction and that it has no existence except as an abstraction from moments of a man being aware simultaneously of himself and also of himself being aware of something. The same may be true of personality.

Then comes another great leap, which carries our lecturer to one of the most important developments in the correlation between behavior and electrical studies of the activities of the brain, namely the establishing of a high correlation between the capacity of an individual for versatile behavior and high variants in brain rhythms. This leads him to consider the significance of this in relation to the amount of variety which is needed to recognize variety (Ashby), to communications theory, and then to a consideration of the fact that adaptive behavior is built out of conditioned reflexes superimposed upon unconditioned reflexes, a process which is governed by statistical laws. In this process he recognizes three essential stages: (a) the selection of relevance out of random input on "noise," (b) storage and classification of input bits, (c) the re-combination of stored data to form fresh psychological events. In essence this is the method by which the central core of preconscious processing is built into the psychophysiology of behavior. As we begin to grasp the full implications of this preconscious conditioning, we face a new understanding of the variety and detail of human experience. What Grey Walter outlines here provides a basis for understanding of (a) preconscious filtering of data, and (b) for preconscious conditioning built out of and around the unconditioned reflexes which arise directly out of the body's essential homeostatic and homeothermic biochemical and biophysical requirements.

The speaker then makes a passing reference to the data dependent upon afferent isolation. Here again he slips into verbal error, by using the currently accepted but fallacious term "sensory deprivation." The phenomena are afferent but not sensory;

and are dependent not upon deprivation (a word which begs the whole question of its mechanism) but upon relative isolation. No method has been devised by which the continuous inflow of preconscious enteroceptive afferents has been eliminated. The exteroceptive inflow can be eliminated and proprioceptive afferents reduced; but that is all. Secondly, we should not overlook the significance of sharply localized afferent reductions, as first emphasized by Cushing in World War I. Quite unwittingly Cushing showed that the tragedies of war gave experimental verification to Freud's basic observation on the role of sacral functions in behavior. Cushing observed that if a man is cut off from all afferents from the lumbosacral segments by a transection of the cord above the lumbosacral level, he becomes a philosopher and a model of resignation. This is a form of selective afferent isolation the significance of which must be kept in mind in the interpretation of all current experiments in this area.

The speaker next leads us to consider the role of the autonomic nervous system; and here he brings to us a direct report of his own experimental work with the galvanic skin reflexes (more particularly, alterations of skin resistance). He focuses on the duration of the latency period of conditioned as opposed to unconditioned galvanic skin reflexes, and shows that the latency periods for the unconditioned responses are always briefer than the latency period for conditioned responses. With this as a base, he describes a series of experiments on the spontaneous, unguided learning process (i.e., learning specifically how to avoid an unpleasant stimulus). He shows how the learning curve varies from one individual to another, and how this variation correlates with a shift from unconditioned responses with brief latency periods to longer latency periods for the conditioned responses, until finally the avoidance response is so completely learned that the galvanic skin reflex itself is no longer evoked. Here again one sees clearly the role of preconscious functions in the wholly preconscious acquisition of autonomic responses.

Here we must consider further the data

from experiments on human cerebral vitality. Of special relevance is the selective correspondence of intra-cerebral events with the patterns of external events, a correspondence which requires some process of selective filtering at a primary intake point, a "significance filter" or "relevance filter," as Grey Walter calls it. This implies matching of signals from incoming "gestalts" to some pre-set pattern. This too is linked directly to instinctual behavior through the galvanic skin reflex. And here the emphasis on the skin is of even greater importance than Dr. Grey Walter takes time to point out. The skin is the boundary between each of us and the outside world, between the "I" and the "non-I" world. Moreover, distance receptors are mere extensions from the skin,-like the relation of wire-tapping to the unaided human ear. It is this which gives peculiar significance to his studies of variations in the latency of the galvanic skin reflexes of conditioned and unconditioned stimuli in the learning process.

It may however, be useful to emphasize the fact that all such conditioning, both autonomic and psycho-motor, the resultant intra-cerebral mechanisms for coding and sorting, the widely dispersed relays which insure attention, all of these operate not in the conscious symbolic system nor in the system of distorted or "unconscious" symbolic processing (in the psychoanalytic sense) but on the preconscious level. This gives to preconscious processing a dominant significance in human mental life.

Ultimately, if the machine model is to become a more adequate diagram of human mental equipment, it must provide us with a facsimile of 3 basic modes of mental functioning:

(a) The vast majority of its action must take place on a level which is equivalent to preconscious processing. It is mainly on this level that *unconditional* responses occur to specific stimuli, with diffuse transmission to hypo-thalamic autonomic pathways for homeostatic and homeothermic controls; and it is in the same preconscious system that conditioned responses with longer latencies lead to less sterotyped patterns. For it is on this level that we estab-

lish conditioned reflexes to novel or neutral stimuli which have been linked to the unconditioned stimulis. Therefore, it is this which provides the initial diffuse searching and the gradual orientation which leads to adaptation. It is this multiple inflow and outflow, including the autonomic, which constitutes the raw material of the learning process.

Finally, it is on this level that input patterns are matched with pre-learned configurations.

All of this occurs through preconscious processing, based on unconditioned and conditional reflexes. This then is the core of what the machine model must in some measure set out to duplicate.

(b) The next step however, is even more difficult. Superimposed on the preconscious process is a symbolic system ' which samples the preconscious stream. This must also include self-sampling, if it is to be a true analogy to human symbolic behavior. Moreover the sampling process feeds bits of information data back into the preconscious stream through fresh conditioned reflexes. This also must be matched by the machine model.

(c) Finally, the machine model must reproduce in some measure that distortion of the sampling and self-sampling system, which in human affairs we call "unconscious." To reproduce all three of these ingredients would be the ultimate goal of

the machine model.

# INFORMATION INPUT OVERLOAD AND PSYCHOPATHOLOGY 1

JAMES G. MILLER, M.D., Ph.D.<sup>2, 3</sup>

It is a commonplace that variations in rates of input of energy or matter to the nervous system can result in pathological behavior, even complete breakdown in function and death. This is true both of lacks of energy or matter input, such as cerebral hypoglycemia and generalized starvation, and also excesses of energy or matter input, such as heat stroke and magnesium poisoning. So there can be energy or matter input underloads and overloads to the brain.

In the last decade increasing attention has been devoted by physical, biological, and social scientists to the effects of alterations of rates of information input into systems, independent of changes in energy or matter flows. We use "information" in the currently accepted technical sense and are concerned not with the value of the information, but rather with the quantity of it. When measuring amounts of information, our units, according to current convention, will be binary digits or bits. The present view of information theory is that signals are complexes of data transmitted from one physical system to another, conveying information only if they could not be predicted from data previously available to the receiving system. As Jackson says(5):

Incomplete knowledge of the future, and also of the past of the transmitter from which the future might be constructed, is at the very basis of the concept of information. On the other hand, complete ignorance also precludes

ould not be prely available to the kson says(5): the future, and also ter from which the ed, is at the very

communication; a common language is required, that is to say an agreement between the transmitter and the receiver regarding the elements used in the communication process. . . . The information of a message can be defined as the "minimum number of binary decisions which enable the receiver to reconstruct the message, on the basis of the data already available to him." These data comprise both the convention regarding the symbols and the language used, and the knowledge available at the moment when the message started.

#### INFORMATION INPUT UNDERLOAD

In the last few years there have been a number of experimental studies suggesting that pathological function of the nervous system and abnormal behavior can result from information input underload, often referred to as "sensory deprivation." Spitz (14) and Fischer(1) have held that the stimulation from the interaction between an infant with its mother, particularly in the third to sixth months of infancy, is necessary for normal mental development. Studying single children and small groups in institutions, they have contended that the effects of "hospitalism" in situations where maternal stimulation is lacking may lead to severe mental retardation. As yet, this question has not been studied with appropriate controls. Several rigorous experiments with animals on related issues, however, have been carried out. For instance Riesen(13) found that if he raised a chimpanzee in complete darkness for the first 3 months of life and then brought it into light, it would never be able afterward to see perfectly. Apparently some sort of information input or sensory stimulation was necessary during the first 3 months for the visual nervous system to develop properly. On the other hand, a chimpanzee raised in light for the first 3 months and then kept in darkness for as much as. 6 months, when returned to light, had temporary difficulty seeing, which cuickly cleared up. The first few months appeared to be the critical period of need for visual inputs. Thompson and Heron(15) found

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Director, Mental Health Research Institute, University of Michigan, Ann Arbor, Mich.

<sup>&</sup>lt;sup>3</sup> The author wishes to express his indebtedness to all his associates at the Mental Health Research Institute, whose continual discussions provided the substrate on which this research grew, and especially to Donald Marquis, Richard Meier, William Horvath, Caxton Foster, Arnold Horowitz, Donald Maynard, Kent Marquis, Lillian Kelly, Tom Mahs, Paul Halick, Merrill Jackson, Leonard Uhr, and Thomas Law. This research was supported in part by Department of the Army Contract DA-36-039-sc-78801 and by United States Public Health Service Grant MY-1871.

that puppies reared with restricted sensory and perceptual experiences showed more active exploratory behavior than normal in later life. This fits in with the fact (cf. 12) that the genitalia of infant rats must be licked by their mothers or be stroked lightly by a human caretaker with a pledget of cotton to elicit urination or defecation. This is not a mechanical effect of the mother's tongue or the cotton, but is mediated through sense receptors on the rat's skin. Also Meier and Stuart(9) have shown in a controlled study that handling and fondling kittens will speed up the normal maturational fur color change.

A good deal of attention has been given to the sensory deprivation work of Heron, Doane, and Scott(4) in Hebb's laboratories, of Lilly(8), and of others. These investigators have reported that diminishing the normal rate of sensory input to human subjects, either in closed booths or submerged under water with eyes and ears covered and a breathing tube to the surface, in a few hours produces delusions, illusions, hallucinations, and other abnormal psychic phenomena in some ways like psychotic states.

From all these human and animal investigations it appears that the organism must receive a certain rate of flow of sensory information for normal development, particularly in infancy, and also for the maintenance of adjustment throughout life. If information input underload occurs, pathological behavior and perhaps permanent structural change result.

#### ANECDOTES ON INFORMATION OVERLOAD

In our present research we are asking whether the reverse condition, information input overload, can also produce psychopathology. This seems reasonable, since both energy underload and energy overload can disturb organisms. We have not discovered any publications giving clearcut indication of this. There are, of course, suggestive anexidetes. It is not only in novels and motion pictures that corporation executives, under prolonged daily pressure to make many rapid-fire decisions, break down. The speedy aging of America's presidents, largely from the rush of their life and the continual weight of decisions, has

been noted. The pressure on generals in wartime often has comparable effects.

Perhaps the many blatant and competing sources of information—radio, television, movies, magazines, and newspapers—contribute to the increased tension said to characterize our age. In the moving pictures a person breaking down emotionally is depicted as seeing whirling bright lights coming toward him, loud noises, and other information overloads, as if this were the subjective experience of patients in this plight. But this is anecdote, not controlled experimentation. Is it possible to determine rigorously the effects of information input overload?

# GENERALIZATIONS ABOUT FIVE LEVELS OF SYSTEMS

The preliminary studies which we shall report here are directed to this question. They are conducted in the conceptual framework of the general behavior systems theory being developed by our research group (10). We are concerned with individuals, but also we wish to discover whether there are measurable similarities in the functions of various levels of behaving systems. We are equally interested in systematic differences across these levels. So we have undertaken to investigate the effects of information input overloads on 5 levels of behaving systems: The cell (the neurone), which is a subsystem of the organ (the brain), which is a subsystem of the individual, who is a subsystem of the small face-to-face group, which is a subsystem of the larger social institution. Our research, therefore, comprises 5 separate, concurrent studies with similar research designs, at the levels of cell, organ, individual, group, and social institution.

Three aspects of behaving systems can be studied in relation to information input overload. The first is their performance when viewed as channels transmitting information; that is, the relation between the input of information into the system and its output. The second is the mechanisms of defense or adjustment of the system to the stress of information input overload. And the third is the costs.

Concerning performance, we have concluded from a literature survey that if in-

1

put in bits per second is plotted on the abscissa against output in the same units on the ordinate, output will rise as a linear function of input up to a certain point, leveling out at a channel capacity which cannot be exceeded, remaining at that level for a period. It will probably then decrease swiftly, the amount of information being put out actually decreasing in a "confusional state" as the input rate continues to increase. This represents a final collapse of this function of the system.

In our literature search we tried to discover all the mechanisms of adjustment used by systems to handle information overloads. We identified a number, each of which in some way helps with the prob--lem, but each of which also has a cost in some sort of decreased efficiency of information transmission. Not all systems have all these mechanisms of adjustment available to them. In general it seems that the larger and more complex systems have more of them, which is understandable because they have more specialized subsystems, whose functions are to provide such mechanisms. Those which we have identified are: (a) omission—temporary nonprocessing of information; (b) errorprocessing incorrect information, which may enable the system to return to normal processing afterwards; (c) queuing-delaying the response during a period of high overlap of input information in the expectation that it may be possible to catch up during a lull; (d) filtering-neglecting to process certain categories of information while processing others; (e) cutting categories of discrimination-responding in a general way to the input, but with less precision than would be done at lower rates, i.e., instead of reporting "I see yellow," saying "I see a light color" or "I see a color"; (f) employing multiple channels -processing information through two or more parallel channels at the same time; decentralization is a special case of this; and (g) escape from the task.

These mechanisms of adjustment do not sound like the classic mechanisms of defense of Anna Freud, but they may overlap somewhat. For example, the mechanism of isolation may be like omission and flight from reality may be like escape from the task.

Costs of information transmission may be quantified variously. One may measure the amount of energy required by the system to transmit an average bit of information; the amount of some other scarcity required to transmit an average bit; the amount stressful overload shortens the duration of survival of the system or organism; and even perhaps the effects in altering the probability of risks taken by the system in making decisions critical to its continuing existence.

In general we conclude from our literature studies that the cost per bit of information flow at very high rates is probably much greater than at low rates, rising precipitously at the confusion period as the system begins to break down. However, the empirical measurement in comparable units of costs of information flow across the various levels of systems is difficult and we have not yet undertaken such studies. We mention them simply as possible future researches and shall now turn to the details of measurements of performance and mechanisms of defense at the various levels of systems.

#### DATA ON THE CELL

It is possible to overload a cell specialized for the transmission of information—a neurone-by increasing the rate of input of electrical impulses to it until finally its transmission breaks down. This is not an energy overload, and is rapidly reversible. A review of relevant articles indicates that there is as yet no agreement as to how neurones code information, whether amplitude modulation, frequency modulation, pulse duration modulation, or some other method is employed. We therefore cannot make a direct translation from neural impulses per second to bits per second. However, if we were to make the not-too-unreasonable first-order assumption that there is a correlation of some sort between the number of impulses and the number of bits per second, input-output performance curves of neurones in units of impulses per second may be assumed to have a similar ... shape to curves calculated in bits per second. In many neurophysiological studies

i.

the rates of stimulation of cells were altered and the outputs measured electronically. For example, Granit and Phillips(3) reported concerning the responses of a Purkinje cell of the cerebellum that its output rate followed the input rate up to about 180 impulses per second, but when stimulated at a faster rate (280 impulses per second), its output fell to 30 a second.

#### THE ORGAN SYSTEM

Input-output performance characteristics of total organ systems have also been studied, the units in such researches also being impulses rather than bits per second. Function of the complete visual tract, an entire organ system, was investigated, for instance, by Jung and Baumgartner(6). They made microelectrode recordings from the optical cortex in cats being stimulated by light impulses of constant duration but various rates of flicker. Concerning what they called "B-type" reactions in the optical cortex, they made the following findings: the discharge rate increased from about 22 per second when 4 flashes per second were given to the cat, up to a maximum of about 25 per second when 7 flashes per second were administered. On further increase of flash frequency the rate of impulses diminished, so that at 10 flashes per second it was .18; at 18 flashes per second it was 15; and at 50 flashes per second it was 6.

#### THE INDIVIDUAL

Quastler and Wulff(11) investigated piano playing as an example of information transmission by individuals. Random music, constructed from a table of random numbers, was played by 3 young pianists who were excellent sight readers. After practice with this sort of music, the subjects estimated the highest rate at which they could play the music at sight. This rate was set on an electric metronome, and the first test piece presented. Successive numbers were then presented at gradually increasing speeds, up to a rate which was obviously well beyond their capabilities. All performances were recorded on tape and timed with a stopwatch. The errors in the different performances were scored by listening to the tapes. From these errors plus knowledge of the amount of music played in

a given time, rates of information transmission were calculated.

The results of these tests were as follows: The pianists made few errors up to a speed of about 5.2 keys per second. Thereafter as speed increased, precision was sacrificed and the error rate increased so that both the transmission rate per second and the number of correct keys per second remained approximately constant. Then the proportional trading of speed for precision went on until a second critical point was reached, which was the highest useful speed, about 10 keys per second. Beyond this rate the quality of performance deteriorated rapidly, as a result of confusion. The peak transmission rates were between 10 and 14 bits a second when 3 to 5 keys of the piano were used; 16 bits a second with 9 keys; 19 bits a second with 15 keys; 23 bits a second with 25 keys; and 22 bits a second with 37 keys. When the range was extended to 65 keys, a few errors occurred even at low speeds, and the transmission rate peaked at only about 17 bits a second, because frequent jumps had to be made between distant keys. There were individual differences among the subjects in the mechanisms of adjustment to information input overload. One sacrificed speed but minimized errors; another kept closer to the established speed than the others, though with more errors.

#### THE GROUP

At the group level Lanzetta and Roby (7) conducted an experiment with sets of 3 subjects seated in separate booths, communicating by an interphone circuit through which, by depressing a hand switch, any subject could speak simultaneously with both other subjects. In each booth were 2 switches, each with one "off" and 3 "on" positions. There were also printed operating instructions in the booth. A slide projector threw pictures of 2 simulated aircraft instruments on the front wall of each booth. The subjects were required to relay information presented to them by instrument readings to the proper booth and to execute control actions with their switches, based on relayed or directly available instrument readings. The settings

of the instruments were automatically recorded.

The rate of presentation of the slides was altered and other changes were also made in the situation. Average group error increased as the rate of information transmission in bits per minute increased. The maximum rate of information transmission in these groups was 12.64 bits per minute.

#### THE SOCIAL INSTITUTION

Data concerning information input overload in social institutions are rare, but Fritz and Grier(2) have studied information flow in human organizations larger than groups in direct contact, specifically the conversations between pilots and control tower operators during landings at an Air Force training base. In this situation the upper limit of transmission observed was about two bits per second, by their perhaps questionable calculations, and there was evidence that above such a rate overloading could occur.

The various researches reviewed indicated that at different levels a number of the mechanisms of adjustment mentioned above are employed, including omissions, errors, queuing, and filtering.

It appears that channel capacities per channel are less the larger the system. This is a regular, hierarchical difference, proceeding from a maximum of several hundred impulses (or bits) per second at the level of the neurone, to perhaps 200 at the organ system, to about 30 for the individual, to a good deal less for the group and the social institution, although these last values are less certain. While it is not entirely obvious from the literature at present, it does make sense that the more components there are in a channel, the more opportunities there are for loss of information at junctions between subsystems. Also, no such channel is faster than its slowest component. Of course large systems have many more parallel channels than small systems, so that they can handle more information overall, even though the average channel capacity is lower because the average channel is longer and has more subsystems.

#### OUR CURRENT EXPERIMENTS

An interdisciplinary team in our Insti-

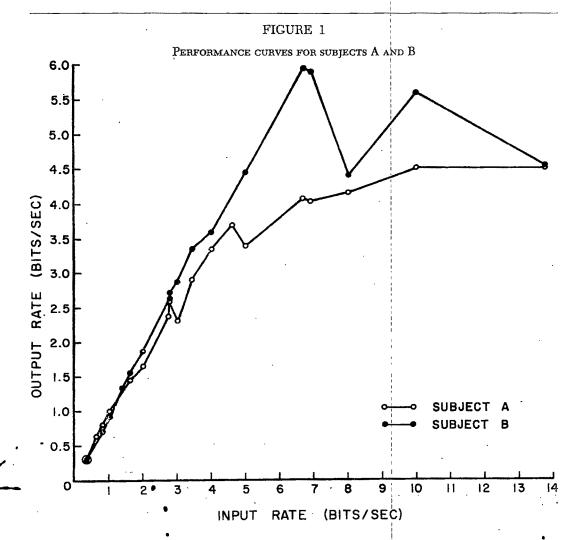
tute is now collecting data on performance of systems at 5 levels under information input overload. For neurones we are trying to determine the method of information coding by a sort of cryptographic analysis. We plan to make a contingency table, plotting various sorts of inputs to neurones against their respective outputs, hepeful of learning by analysis of that table what code or codes are used. We have built an apparatus capable of stimulating neurones at various rates, with various degrees of regularity or randomness, and at various intensities. We are studying individual fibers in frog nerves, recording outputs from microelectrodes.

At the level of the organ we plan to study the visual nervous system of the cat, stimulating the retina electrically and photically with our apparatus and recording outputs through electrodes implanted on the optic nerve, the lateral geniculate, the superior colliculus, and the calcarine fissure area of the cortex. In these cell and organ level studies we expect to find performance curves rising to channel capacity, levelling out, and eventually breaking downward as input rates increase. Further, we expect to find in the cell the mechanisms of adjustment of omission and error (that is, stimuli not strong enough to fire the next neurone in a chain). Queuing may well also exist. The neural threshold constitutes a type of filtering. Whether other mechanisms of adjustment will be found is uncertain, but at the level of the organ, of course, multiple channels also exist.

Individual and group experiments have both been done on the IOTA apparatus which we have designed and built. This is a piece of equipment by which simuli are presented to a subject on a transparent ground glass screen about 3 by 4 feet in size, which sits on a table in front of him. He responds by pushing appropriate buttons arrayed before him. Stimuli are thrown on the back of the screen by a Perceptoscope, which is a sort of projector capable of showing movie film at rates of from one to 24 frames per second. The film contains little white dials with black arrows on them, which can appear in from 1 to 8 of the 8 two-inch wide vertical slots which run down the screen in front of the subject. Arrows can assume any one of 8 angular positions, like clock hands. Before the subject is a set of 8 buttons for each of the slots being used. Since he can see stimuli in a maximum of 8 slots at once, altogether he has 64 buttons, 8 sets of 8 buttons each. If an arrow in Position b appears in Slot 3, the correct response is to push Button b of the set for Slot 3. Any other response is an error. If the subject pushes none, that is an omission.

Queuing is also possible. The subject has a foot pedal by which he can lower or raise opaque strips behind each of the slots. At the beginning of each test only the top square in each of the slots being used is open so that light can come through. However, if the subject pushes his pedal, he can move the opaque strips to open up to

11 more squares, a maximum of 12. By pushing the pedal in the other direction he can close these up again, as he wishes. The moving picture film is so made that if an arrow appears in Position b in Slot 3 in Frame 1 of the film, it goes to the next lower position in that slot in Frame 2, and to the next lower in Frame 3, until it has gone through all 12 positions and finally disappears from the screen. In the meantime other stimuli may be appearing higher in the same slot or in others. When the subject pushes his queuing pedal, he therefore gives himself more time to respond to the stimulus before it disappears. He can filter by paying attention only to the arrows pointing up or to those pointing to the left, rather than to all 8 positions. He can cut categories of discrimination by



pushing all 4 left buttons in Slot 3 if he is not sure exactly in which of the 4 left directions the arrow pointed, but knows it pointed toward the left, or by pushing all 8 buttons for Slot 3 if he simply saw an arrow but has no idea as to its direction. On occasion he can use multiple channels by working with both hands at the same time. Finally escape is possible, if he gives up and refuses to continue the task. So all the mechanisms of adjustment we have mentioned are possible on the IOTA.

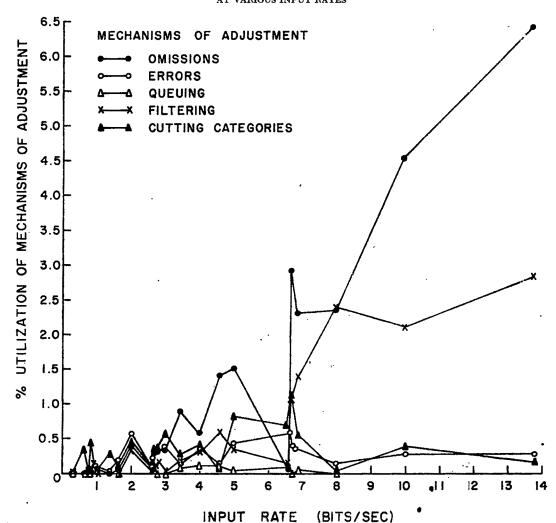
This apparatus can increase in several ways the amount of information per sec-

ond being processed: by speeding the rate; by increasing from 2 to 8 the number of alternate positions for the arrows; by raising the number of slots used simultaneously; or by altering the degree of regularit, or randomness of the presentations.

We have run experiments on this equipment with trained individual subjects. Performance curves for two subjects are seen in Figure 1. There are individual differences, but the curves have similar forms, rising to a channel capacity between 4.5 and 6 bits a second and then perhaps falling off, though our data so far do not

FIGURE 2

Mean utilization of mechanisms of adjustment by both subjects at various input rates

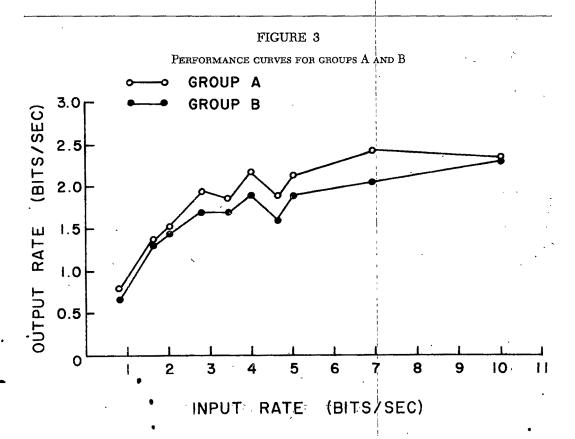


make us certain this fall occurs. All mechanisms of adjustment mentioned above except multiple channels and escape were used by these subjects, as indicated in Figure 2. In general the use of these mechanisms—especially omissions and filtering—increased as the loads increased.

We have also begun to use the IOTA apparatus with groups. In this situation 3 members of the group, A, B, and D, face the screen. A calls out the slot in which an arrow appears, and B calls out a letter representing the position. C, whose back is turned to the screen but who is facing the buttons, then pushes a button in terms of the information he got from A and B. When C pushes a button a small red light in one of 8 positions lights up over one of the slots, indicating which button he pushed. If his push is correct, D says nothing. If the push is incorrect, D corrects him and C pushes another button until he finally pushes the right one. The performance curves from our runs with two groups (Figure 3), have the same general appearance as the performance curves

of the individual subjects, though at lower channel capacities between 2 and 2.5 bits per second. Also the use of mechanisms of adjustment (Figure 4) was comparable, although it happened that queuing was not employed. Group system organization involves new and interesting problems related to the various roles of its members and the effects of their intercommunication channels on the group performance.

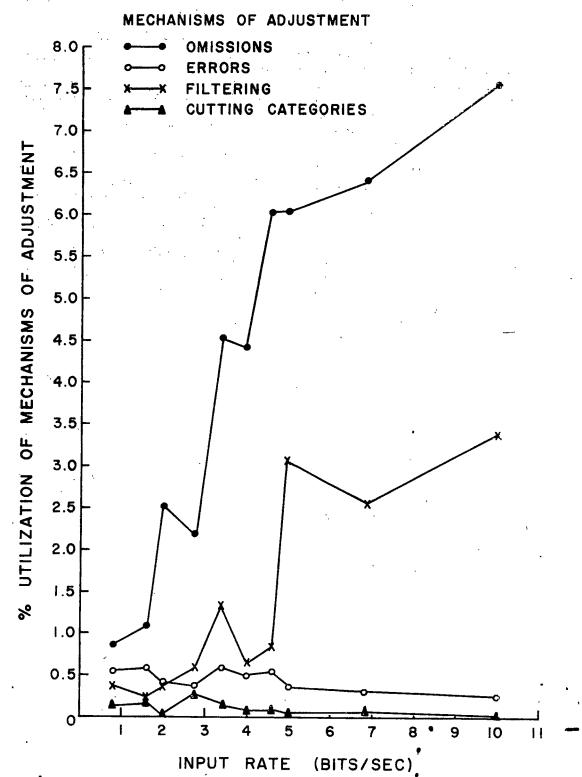
Finally a comment on the level of the social institution. We are arranging to do research in the next few months on the overloading of a simulator developed for training and research on the operation of our national air raid warning system. In this simulator, groups of individuals in separate rooms receive information automatically, concerning planes flying in the particular air spaces for which they are responsible. They reinterpret these signals so that they can be plotted on the coordinates of information boards, for the military command. We plan to generate different presentation rates with various degrees of randomness of signals in different positions,



ĺ

FIGURE 4

MEAN UTILIZATION OF MECHANISMS OF ADJUSTMENT BY BOTH GROUPS AT VARIOUS INPUT RATES



and to discover the performance characteristics, channel capacity, and mechanisms of adjustment of this heirarchical, larger than face-to-face social institution. It is apparent that the same types of dimensions can be used in measuring this sort of performance as in smaller systems. Preliminary experiments done by others with such manmachine systems have shown that under high overload rates they can break down and that, as would be expected, the systems are under real stress in saturation raids and other overload circumstances.

## Conclusion

Although more than a thousand related articles were reviewed in our literature survey, no references were ever found in them or in their bibliographies crossing from one level, say the neurophysiology of the cell, to another, such as group psychology. In one article an offhand suggestion was found that such generalization might be possible, but it was apparent that in present-day behavioral science cross-level similarities are rarely considered and general systems properties seldom taken into account. This, despite the fact that at all levels comparable performance curves have been discovered. Since such general systems characteristics are not sought, the same phenomenon, with different names, different dimensions and units, is being discovered over and over again at different levels. Known for many years in neurophysiology, it is only recently being recognized at the individual level. Yet it is probable that, if information input overload causes similar performance curves and mobilization of comparable defenses at all levels of behaving systems, it can explain some of the psychopathology of everyday life and clinical practice.

# **BIBLIOGRAPHY**

- 1. Fischer, L. K.: Am. J. Orthopsychiat., 22: 522, 1952.
- 2. Fritz, E. L., and Grier, G. W., Jr.: Report No. R-54, Control Systems Laboratory, Univ. Ill., 1954.
- 3. Granit,  $R_{\cdot\cdot}$ , and Phillips, C. G. : J. Physiol., 133 : 520, 1956.
- 4. Heron, W., Doane, B. K., and Scott, T. H.: Canad. J. Psychol., 10: 13, 1956.
- 5. Jackson, W.: Communication Theory. Edited by Willis Jackson. New York: Academic Press, 1953, p. 2.
- 6. Jung, R., and Baumgartner, G.: Pflügers Archiv., 261: 434, 1955.
- 7. Lanzetta, J. T., and Roby, T. B.: J. Abnorm. & Soc. Psychol., 53: 307, 1956.
- 8. Lilly, J. C.: Group for the Advancement of Psychiat., Symposium No. 2: 1956.
- 9. Meier, G. W., and Stuart, J. L.: Psychol. Reports, 5: 497, 1959.
- 10. Miller, J. G.: Am. J. Psychol., 10: 513, 1955.
- 11. Quastler, H., and Wulff, V. J.: Report R-62, Control Systems Laboratory, Univ. Ill., 1955.
- 12. Reyniers, J. A., Thexler, P. C., and Ervin, R. F.: Lobund Reports, 1: 20, 1946.
- 13. Riesen, A. H.: Scientific American, 183:16, 1950.
- 14. Spitz, R. A.: The Psychoanalytic Study of the Child, Vol II. Edited by Anna Freud et al. New York: International Univ. Press, 1946, p. 113.
- 15. Thompson, W. R., and Heron, W.: J. Comp. Physiol. Psychol., 47: 77, 1954.

# BRAIN DAMAGE FROM CHRONIC ALCOHOLISM: THE DIAGNOSIS OF INTERMEDIATE STAGE OF ALCOHOLIC BRAIN DISEASE 1

A. E. BENNETT, M.D.<sup>2</sup>, G. L. MOWERY, AND JOEL T. FORT, M.D.

Our studies of hundreds of patients in the past 7 or 8 years point to the rising incidence of acute and chronic stages of alcoholic brain disease; and to the existence of a midway stage, which we have called the intermediate brain syndrome(1). Our findings about these stages, particularly the intermediate one, have implications for practical treatment and a preventive program.

Pathologic drinking, chronic alcoholism and alcoholic addiction have become a major national problem. "From a public health standpoint," Maurer and Vogel(2) state, "probably the most important drug of addiction in the United States is alcohol." Bowman(3) raises the question why, out of some 70 million persons who use alcohol without undue harm, some 5 million use it at times to excess and about a million of them are alcohol addicts. He concludes that existing knowledge and tools must be used to the utmost, until research yields more adequate data regarding causes of alcoholism and methods of treatment.

Statistics show that organic brain disease in alcoholic patients is increasing. The first admission rate of alcoholics with psychosis to California state mental hospitals increased from 5.9 in 1940 to 7.5 in 1953 per 100,000 civilian population. This increase in alcoholic brain disease has partly replaced the incidence of syphilitic meningoencephalitis, which in the same period dropped from 7.5 to 1.5 per 100,000 population. In 1953 the first admission rate of alcoholics with or without psychosis, 34.3, almost equaled that for patients with schizophrenia, 36.2 per 100,000 population.

Many persons still find it hard to understand that alcoholism is a disease; and that

alcohol addiction is an advanced stage which may lead to such other serious diseases as hepatic, metabolic, renal, cardiac and organic brain diseases. The organic factors in chronic alcoholism tend to be overlooked, and the neglect accounts for many failures in treatment. These facts are sometimes ignored in the literature. For example, Alcoholism as a Medical Problem (4), a report of a recent conference sponsored by two New York medical groups, has no mention of the incidence and importance of alcoholic brain disease. A few investigators have called attention to this neglect. Lemere(5) points out that the habit-forming properties of alcohol have been insufficiently stressed in the literature; and that most alcoholics may drink for years "before they gradually and insidiously slip over into uncontrolled pathologic drinking." The loss of control he ascribes to "physical changes that take place in the brain after years of heavy drinking (6).

In our experience in the psychiatric department of a private general hospital, a large proportion of patients have been admitted because of chronic alcoholism, many of them with serious physical complications. Alcoholic brain disease is usually classified as: (a) acute alcoholic brain syndrome, acute intoxication, delirium tremens and acute hallucinosis—a reversible stage; and (b) chronic brain syndrome, certical atrophy and midbrain involvement, organic dementia or Korsakoff's or Wernicke's disease—an irreversible stage.

In the past 6 years about 750 patients were admitted for alcoholism to the psychiatric department. Electroencephalographic studies showed that in about a third of these patients the persistently abnormal EEG pattern would finally return to normal after months of sobriety. Cartical cerebral atrophy was present in most cases of chronic alcoholism. From these observations it was decided to extend the study over a comprehensive series of cases.

<sup>&</sup>lt;sup>1</sup> Read at the annual meeting of The Society of Biological Psychiatry, Atlantic City, N. J., June 13-14, 1950

<sup>&</sup>lt;sup>2</sup> From the Department of Psychiatry, Herrick Memorial Hospital, and the A. E. Bennett Neuropsychiatric Research Foundation, Berkeley, Calif.

# ELECTROENCEPHALOGRAPHIC STUDIES IN 227 CASES OF ALCOHOLISM

Electroencephalographic findings were persistent mild generalized 15-30 and 4-7 per second activity, at times with paroxysmal slowing and spiking. Fast activity parallels the acute clinical course of alcoholism and can improve. Persistent fast activity with slow activity spike discharges indicates organic brain pathology. These persistent abnormal EEG tracings are a valuable early diagnostic sign of organic brain disease. In some cases they precede the clinical symptoms of organicity.

Incidence of abnormality in 227 case studies: 78 cases with repeat EEG records: 36%; 25 cases with psychological tests: 11%; 12 cases with pneumoencephalograms: 5%.

- 1. Acute stage, 98 cases: Thirty-seven (37%) had abnormal EEG records, reversed to normal; 8 cases had psychological testing, 3 with evidence of organicity; 53 cases had normal EEG records.
- 2. Intermediate stage, 81 cases: Sixty-four (79%) had abnormal EEG records, usually reversed to normal slowly; 5 cases out of 6 psychological tests showed organic brain damage; 4 cases had pneumoencephalograms 3 of which showed cerebral atrophy; 17 cases had normal EEG records.
- 3. Chronic stage, 48 cases: Thirty-eight (79%) had abnormal EEG records; 11 cases had psychological tests: all showed evidence of organic brain damage; 8 cases had pneumoencephalograms: 7 showed cerebral atrophy; 10 cases had normal EEG records.

78 cases with repeat electorencephalograms

Acute Intermediate Chronic

	15 Cases	39 Cases	24 Cases
Unchanged	2%	14%	14%
Decreased abnormality	13%	21%	6%
Increased abnormality	0%	4%	4%

# CLINICAL OBSERVATIONS OF INTERMEDIATE STAGE OF BRAIN DAMAGE

· Personality changes: These show such symptoms as a rationalization of drinking, pathologic lying, infantile behavior, poor judgment, hostility, emotional lability, defiance, denial of illness, lack of insight.

Drinking pattern: It is an addictive, de-

pendent or compulsive drinking, usually with daytime and solitary drinking.

Physiological reactions: These include blackouts, withdrawal reactions, severe hangovers. There are deliriod or convulsive episodes in about 50% of cases, and systemic complications such as fatty liver, cirrhosis, polyneuritis.

Psychological test findings: The main ones are perceptual (visual) organization defect; intellectual and personality deterioration; and impaired abstraction.

A recent French report by Lafon and coworkers (7) of 100 cases of chronic alcoholism confirms our findings. The pneumoencephalographic studies showed cerebral atrophy in 78 (78%) cases; the atrophy often pronounced, was usually diffuse, and was cortical in 8%, subcortical in 44% and corticosubcortical in 48%. The degree of atrophy did not correlate strictly with the clinical manifestations. This frequency in chronic alcoholism suggests a causal link. The EEG was abnormal in 80 patients, normal in 20. In 58 (58%) patients the pneumograms and EEGs could be definitely correlated, principally in cases of longstanding alcoholism. In the 42% with discordant findings the radiologic findings were often significant while the EEGs were within normal limits.

Clinical symptoms: This phase of alcoholism is hard to determine accurately from only the clinical picture. The patient's drinking pattern often may indicate early alcoholic brain disease. He requires a morning drink to control his withdrawal symptoms and to keep on at work. His appetite may be poor and he does not eat enough, so that the nutritional imbalance is aggravated and avitaminosis may become a cause of progressive cortical atrophy. Fatty liver changes are common. He has now lost control over alcohol.

A significant early clinical sign is the appearance of blackouts or temporary periods of amnesia about happenings in the drinking episodes. The patient may resort to other addictive drugs to help allay his fears and tensions. Possibly within a year or two after the development of recurrent blackouts, brain damage will begin.

As the benders become more frequent, the patient drinks to relieve symptoms of

former bouts and cannot stop drinking even when he tries to. At this stage, changes in cerebral functions have usually begun and there is progressive impairment of frontal lobe brain functioning. The patient's increased dependency on alcohol and his inability to control drinking force him into intricate rationalizations, excuses and lies which are aptly termed "alcoholic thinking" by Alcoholics Anonymous. The drinking pattern is compulsive, with solitary and daytime drinking. Poor judgment, emotional lability, infantile behavior, hostility, defiance and denial of illness, with almost complete lack of insight, make up the clinical picture. Too often these symptoms are ascribed to the sociopathic personality of the patient, whereas they are caused by the chronic toxic effects of the addictive drug ethyl alcohol, and are organic symptoms of brain damage.

The concept of alcoholism: The clinical picture, therefore, consists of two factors: the underlying, addiction-prone personality and the alcohol pathology. The two factors are not easily separated in a given case. After an acute episode the underlying personality disorder tends to be emphasized and the incipient stage of brain syndrome to be unnoticed.

Korsakoff's psychosis or Wernicke's disease forms the classic symptoms of chronic brain syndrome. There is hemorrhage or other degenerative processes in the midbrain, due mainly to nutritional deficiency. Pathology is also usually found in the cortex, because alcohol by its narcotic and anoxic effect on nerve tissues leads to cell death and cerebral atrophy. Courville(8) recently called attention to these pathologic effects:

One of the more common noteworthy effects of repeated alcoholic episodes or of chronic alcoholism from constant excessive drinking is a progressive atrophy of the cortex of the frontal lobes. The change affects specifically the convolutions of the dorsolateral surface of these lobes. This relation to chronic alcoholism seems to be one resulting from the toxic effects of ethanol rather than malnutrition (avitaminosis).

He calls such chronic alcoholism

the most common cause of cerebral cortical atrophy in the fifth and sixth decades of life. It may appear as early as the first few years of the fourth decade, particularly in individuals who have presented signs of a psychotic trend.

A report by Tumarkin and coworkers (9) discusses the lack of correlation between clinical and laboratory signs. Though without gross pathologic findings, 7 chronic alcoholic male patients showed brain damage and significant intellectual impairment, according to abnormal EEG records with bilateral, high-amplitude slow waves (3-4 per sec.) in the frontal and some parieto-occipital areas. Certain Wechsler-Bellevue subtests also indicated brain damage and significant intellectual impairment.

These data point to the thesis of a chronic brain syndrome of cortical pathology. Courville's comment of "individuals who have presented signs of a psychotic trend" accords with our observation that those patients suffering from cortical pathology do not show overt signs of organic psychosis, but rather an accentuation and exaggeration, to psychotic extent, of the preexisting personality disturbance. Therefore the true nature of this state escapes the attention of many physicians, including psychiatrists, and at the same time helps to explain why so many chronic alcoholics do not respond to psychotherapy.

The theory, however, that persistent abnormal EEGs indicate the presence of organic brain pathology does not mean, conversely, that all organic brain pathology is accompanied by abnormal EEGs. In some cases of Korsakoff's psychosis, for example, the abnormal EEG can improve to normal despite the remaining organic pathology. A similar condition was seen in some advanced cases of paretic dementia (10).

Diagnosis of stages—the value of electroencephalography: As already noted, the differentiation of stages of the syndrome depends on a careful study of laboratory, clinical and psychological findings (11). Early in our observations we found that in patients who had been hospitalized because of an acute brain syndrome the followup EEG records showed various differences. In some cases the EEG quickly returned to normal while in others it remained abnormal. Abnormal EEGs, however, could not be equated with cortical pathology. Only when the patient's mental symptoms of acute intoxication related mainly to cortical functions and when the abnormal EEG record persisted after the acute episode, did the combined findings point to the chronic cortical pathology. Moreover, as reported by Lafon, in 58 of 100 cases with pneumoencephalographic studies, the radiologic and EEG findings could be definitely correlated.

Abnormal Therapeutic implications: EEGs, therefore, that do not clear up fairly soon after the acute brain syndrome is over point to some residual organic pathology. Prompt recognition of the early stages leads to a proper therapeutic program. Such patients first need medical care of the organic features of brain damage. Half of these patients have other systemic diseases, such as liver damage, which must be treated. Education of relatives as well as of the patient as to the significance of brain damage is important. Relatives are more tolerant of the patient's personality changes and unusual behavior, the better they understand that much of these disorders are beyond his control, but that the organic features will improve with prolonged treatment.

The patients require restraining care, either prolonged hospital or institutional control, until some insight can be established, or close supervision at home to prevent their access to alcohol. The judicious use of disulfiram or citrated calcium carbamonitrile to prevent drinking is an aid to home care of the patient.

The following 3 cases illustrate the value of repeated EEG, psychologic and pneumoencephalographic studies in pointing to intermediate stage of alcoholic brain disease:

Case 1: A patient in intermediate stage of alcoholic brain disease, reversible after 2 years of sobriety. A man of 50 had begun to drink heavily a few years earlier, soon after his son's death. At his first hospitalization for alcoholism, delirium tremens developed and was followed by two convulsions. An EEG recording taken on the day before the first convulsion showed slow activity with superimposed fast activity and minimal spike discharges. The second EEG, taken two weeks later, showed essentially the same findings except for a little in-

creased fast activity. The third and fourth EEGs, taken 1 month and 2 months after the first, still showed abnormally slow activity, but with decreased fast activity and less seizure activity.

An acute alcoholic bout necessitated the patient's second hospitalization 1½ years later. His fifth EEG recording, taken then, showed much improvement, with only very mild fast activity; the sixth, taken a month and a half later, again showed generalized slow activity, but without spike or fast activity. The patient was then put on disulfiram and was able to abstain completely from drinking. The seventh EEG, taken a few months later, showed a normal pattern.

Case 2: A male, age 45, in early phase of intermediate brain disease; psychological tests confirmed organic disease and pneumoencephalography showed early brain atrophy. The patient had been a social drinker since college days. After discharge from the Army, following marital discord and divorce, he began excessive and compulsive secret drinking. He remarried and for 2 years before his admission he had had temper outbursts and rages and physically abused his wife. Even small amounts of algohol produced blackouts and irrational periods, and his wife had to watch over him constantly. Psychotherapy was tried for months, and he joined Alcoholics Anonymous, but with little change in personality or behavior. He agreed to hospital care when his wife threatened to leave him. Two EEGs were normal. A battery of psychologic tests was diagnostic of neurotic character disorder, with diffuse organic impairment defect in immediate memory, some concreteness in thinking and a disturbance in his visual spatial organization. The pheumonencephalogram showed mildly dilated ventricles, dilated basal cisterns and all the subarachnoid spaces, suggestive of brain atrophy. This patient now takes disulfiram daily and has remained abstinent for 2 years. He is successful in both his home life and his business.

Case 3: Illustrates a case of intermediate brain disease that reached irreversible changes. A woman of 49 who had drunk excessively for many years, with violent episodes and extreme hostility toward her family, had had grand mal seizures at times during her drinking. During her first hospitalization she denied having any problems, blaming all her difficulties on her family. Of the 3 EEGs taken in her 3 week stay, the first showed severe fast activity and some slow activity; and the second and third, moderate fast activity but no slow ac-

tivity. A fourth EEG, taken a month after her discharge, showed an increased fast activity. Upon her second hospitalization, 2 years later, she was extremely demonstrative and euphoric, though oriented; a grand mal seizure on the fifth day was followed by a 2-day period of delirium. The fifth EEG, taken just before the delirious episode, showed severe fast activity and some slowing; and the sixth, taken 18 days later, showed some improvement with less fast activity, no slow activity and recovered alpha.

Four psychological tests (Rorschach, Bender-Gestalt Designs, Wechsler-Bellevue Digit Span Test and the Wechsler-Bellevue Block Design Test) were administered during the second hospitalization; all showed definite evidence of organic impairment. Pneumoencephalographic x-rays of the brain made elsewhere showed definite cerebral atrophy.

In the following case the disease was too far advanced for rehabilitative treatment to be effective:

Case 4: Male patient, age 49, illustrates a severe grade of chronic alcoholic brain disease, with permanent atrophy of the brain. The patient had been a problem drinker for 20 years. Presumably his drinking contributed to marital difficulties and in a few years his wife left him. He had lost many jobs because of drinking, but his father's influence had always helped him to find new work. After the father's death in 1954, the patient lived alone with his mother. He drank almost continuously except for periods when his mother took him on trips. He had been in contact with A.A. since 1949 and in recent years had gone to meetings quite regularly, but continued to drink. While living with his mother the patient tried to conceal his drinking from her, and she in turn acted constantly as a watchdog and nurse. During periods of drinking he would become ugly and sarcastic, telling his mother he despised her; on one occasion he physically abused and almost killed her. In 1954, after he had lost a job because of drinking he was committed to a state hospital for 3 months. Upon discharge he took a trip abroad and impulsively, on short acquaintance, married again without having previously obtained a divorce.

At the insistence of his mother and through the influence of A.A., he was finally brought for evaluation. An examination revealed an overly familiar, very pleasant, passive male patient. Although he admitted all of his difficulties with drinking, he minimized their importance and had no insight into the seriousness of his condition. He felt he could so all right if he could move to his own apartment, away from his mother. He saw no reason why he should either stop drinking or attempt to find useful work. He readily agreed to go along with our recommendations but it was quite obvious that he could not carry them out.

An EEG revealed a distinctly abnormal record with a mixture of slow waves and fast activity. A variety of psychological tests showed a generalized deterioration of his personality functioning, with evidence of organic factors, defects such as confusion and memory impairment, all suggesting serious brain damage. A pneumoencephalographic x-ray study of the brain was carried out and it was found that he had almost twice the normal amount of cerebrospinal fluid and there was marked enlargement of the entire ventricular system and patchy evidence of brain atrophy. He made no improvement and had to be committed to a state hospital.

#### DISCUSSION OF THERAPY

Since in many chronic alcoholic addicts alcoholic brain disease eventually develops, the widely held concept of alcoholism as primarily a symptom of a character disorder must be modified. In the initial stage of alcoholism, before addiction is firmly established, psychotherapy is often helpful. But after the onset of alcoholic brain disease all therapeutic efforts must be directed toward helping the patient rehabilitate himself. This means first, that the patient must completely abstain from drinking, in order to regain physiologic balance. Therefore individual or group psychotherapy and the aid of Alcoholics Anonymous should be mainly supportive. Disulfiram for chronic compulsive drinkers usually can give complete chemical restraint; combined with psychotherapy it is very helpful. Again, education of the patient's family as to the need for prolonged therapy and careful followup and enlistment of their aid in this program are essentials to successful therapy. The patient must continue with abstinence for the rest of his life and often he may become fairly well rehabilitated.

Even though our patients are informed of the seriousness of alcoholic brain damage, they are especially difficult to treat and may continue drinking and soon die of intercurrent disease or by suicide or become per-

[February

tion.

industry at the source—breweries, wineries and distilleries. Although these industries do not cause alcoholism, the use of their products contributes to the problem of addiction and mental deterioration. The cost to taxpayers of a nationwide rehabilitation program would be prohibitive, since the

then insight can gradually be established and motivation to learn to live without alcohol is aroused. Psychiatric evaluation to determine whether the alcoholism is symptomatic of a neurosis or psychosis must be also considered.

manent institutional cases. If control can

be established until the organic features

clear and fairly normal judgment returns,

After insight is gained, psychotherapeutic efforts may be fruitful along with social and other supportive measures such as AA to bring about effective rehabilitation. I (AEB) have described our overall treat-

#### PUBLIC HEALTH PROGRAM

ment program elsewhere (12).

The problem of alcohol addiction should eventually be tackled at a national level, with general education of the public as to the prevalence of chronic alcoholism and need for its control. Early detection and recognition of addiction and organic brain disease would require large numbers of professional personnel to carry out extensive surveys and research studies. Problems of treatment and of prevention would have to be handled at the level of a public health program, with substitution of a public health medical approach instead of the present punitive one. By this means many persons could be reached before addiction becomes established and brain disease becomes irreversible. Those patients with brain damage could be rehabilitated to the point where they could preserve sobriety and become useful members of society.

In all large cities, skid rows comprise a major problem. For example, in San Francisco, the country's most alcoholic city, the relief and welfare program for alcoholics costs taxpayers \$4 million a year. It is estimated that about a thousand of these alcoholics repeatedly figure in arrests and other legal actions. Undoubtedly these persons suffer from alcoholic brain disease and should be so treated.

The problem must eventually be tackled at a national level, in our opinion, because it is too large a problem for municipalities or individual states to finance. The cost of a program of detecting addicts with incipient or established brain damage should be borne by a tax on profits of the liquor

# CONCLUSIONS

total number of addicts needing treatment exceeds the nation's state hospital popula-

This study indicates the presence of a syndrome of an intermediate stage of alcoholic brain disease, midway between the acute and the chronic stages. In the intermediate stage the EEG changes, the clinical findings and the psychological test data lead to the diagnosis of incipient brain damage; the presence of cerebral atrophy can be confirmed by pneumogram.

The study of 227 cases showed 98 in the acute stage, 81 in the intermediate stage, and 48 in the chronic stage. In the 81 patients in the intermediate stage, 64 (79%) had abnormal EEG records, with organic brain damage indicated in 9 cases by psychological tests or pneumograms or both.

The implications for treatment are summarized: 1. The persistence of abnormal EEG records after the acute episode emphasizes the need for comprehensive medical treatment of the organic factors, before the brain damage becomes irreversible. These organic factors are often erroneously considered to indicate personality disorders, with consequent ineffective therapeutic measures. 2. The patient under institutional or other supervisory control must stop all use of alcohol, 3. After improvement of the organic features, the patient is ready to begin individual and group psychotherapy and a general rehabilitative program, including the help of Alcoholics Anonymous and similar organizations. 4. The relatives must be made to understand the seriousness of the disease, and their cooperation enlisted in the treatment program. 5. The problem of alcoholic addiction must eventually be attacked at a national level with steps to insure early detection of addiction and organic brain disease, and with a broad program of control of drinking and of rehabilitation.

#### BIBLIOGRAPHY

- 1. Presented as Scientific Exhibit, American Medical Association meeting, San Francisco, 1958, and given the award of Honorable Mention.
- 2. Maurer, David W., and Vogel, Victor H.: Narcotics and Narcotic Addiction. Springfield, Ill.: Charles C Thomas, 1954.
- 3. Bowman, Karl M.: Quart. J. Stud. Alcohol, 17: 318, 1956.
- 4. Kruse, H. D.: Alcoholism as a Medical Problem. New York: Hoeber-Harper, 1956.
- 5. Lemere, Frederic: J. Clin. & Exper. Psychopath. & Quart. Rev. Psychiat. & Neurol., 17: 202, 1956.
- Lemere, Frederic: Am. J. Psychiat., 113: 361, Oct. 1956.

- 7. Lafon, R., Pages, P., Passouant, P., Labauge, R., Minvielle, J., and Cadilhac, J.: Rev. Neurol., 94: 611, May 1956. *In* The Year Book of Neurology, Psychiatry and Neurosurgery, 1957-58 Series. Chicago: Year Book Publishers, 1958.
- 8. Courville, C. B., and Myers, B. O.: Bull. Los Angeles Neurol. Soc., 19: 66, 1954.
- 9. Tumarkin, B., Wilson, J. D., and Snyder, G.: U. S. Armed Forces M. J., 6: 67, 1955.
- 10. Bennett, A. E., Cash, P. T., and Hoekstra, C. A.: Psychiat. Quart., 15: 750, 1941.
- 11. Bennett, A. E., Doi, L. T., and Mowery, G. L.: J. Nerv. & Ment. Dis., 124: 27, 1956.
- 12. Bennett, A. E.: California Med., 85: 235, 1956.

## CURRENT STATUS OF CHILD PSYCHIATRY 1

J. FRANKLIN ROBINSON, M.D. 2

That child psychiatry is a sub-specialty of psychiatry requiring special training for the development of competence has been declared in the establishment of certification in child psychiatry by the American Board of Psychiatry and Neurology. This arrangement postulates that in order to learn the techniques and procedures required in the treatment of children a psychiatrist must initially equip himself with an understanding of the clinical material and principals involved in the practice of adult or general psychiatry. With this foundation he can undertake the specialized training that is necessary for work with children. The Board requires a minimum of two years of approved training in a satisfactory facility for the practice of child psychiatry. The specialized training in child psychiatry must follow a minimum of two years of training in general psychiatry. The adequacy of the candidate's basic training is measured through the requirement that he become certified in psychiatry by the American Board before he applies for examination of his competence in child psychiatry.

For 50 years there have been psychiatrists who devoted their full time to work with children. With a primary interest in juvenile delinquency and probably influenced by Southard's and Fernald's use of ancillary disciplines in a collaborative program, William Healy organized the first clinic for children to serve the Chicago juvenile court in 1909. By 1912 he had moved to Boston, and with The Judge Baker Foundation developed a program that offered services for the broad spectrum of difficulties which presented during childhood. The delinquent was recognized as a troubled person who declared his need for help through his misbehavior and who, because he was not mature, could not provide and plan for himself with sufficient

judgment and perspective. Efforts were directed toward understanding the child in the use of his capacities within the various environments which comprised his life.

With the assistance of the Commonwealth Fund of New York, the National Committee for Mental Hygiene nurtured the development of clinics sponsored by a variety of community interests. The term "community clinic" came into common use to designate that the service was part of an agency structure designed to meet a need which was recognized by the various organizations which served children. The home, the school, the orphanage, the family agency, the settlement house, and group recreational agency were concerned about children who could not accommodate themselves satisfactorily. The bureau of Children's Guidance of New York became an active training center and professional staff was developed which could man the newly established clinics. Demonstration Clinics were financed for specified periods of time. The effectiveness of the early efforts is attested by the record of communities which continued the services by providing on-going funds through civic, Community Chest, or other sources.

During the 1920's work centered around the principle of assisting the child to adjust to the setting in which he lived. The standard procedure involved obtaining an extensive history which at its best was an evaluation of the important influences which impinged upon the child. Histories became more than descriptive and were a compilation of the attitudes and reactive tendencies of each member of the family, teachers, classmates, friends, religious advisors, etc. Interviews were held often with others than the parents. When children were in foster care, information was obtained from foster workers and perhaps directly from the foster parents.

Many patients were referred by agencies, and it was the general practice to maintain a central social register in each community so that a clinic could know when the family had had contact with another social agency.

<sup>&</sup>lt;sup>1</sup> Read at the 1.5th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Director, The Children's Service Center of Wyoming Valley, Inc. Wilkes-Barre, Pa.

The cooperative case was one in which the agency with professional staff (usually social casework) contributed historical information and took responsibility in whole or in part for carrying out recommendations. The service was rendered to the referring agency as well as to the family.

The history included an account of the child's development both physically and socially. The evaluation of his aims and tendencies was augmented by the psychologist's measurement of his potentials with standardized tests (later with projective techniques) and the psychiatrist's appraisal in the interviews with the child. The information so compiled was reviewed at a diagnostic staff conference to which representatives of other agencies, teachers, ministers, etc. might be invited. At such a conference recommendations were formulated and their commission was assigned to members of the clinic staff or others. The clinic was in the position of evaluating the influence of parents and other professional workers upon the child and often found itself directing the practices of schools and other agencies.

While other social agencies were learning to recognize the variations in ability and behavior of children, the clinic easily assumed an authoritative role and the psychiatrist was the natural leader of the clinical group. Social workers and psychologists learned to recognize the common disorders of children, and case loads included more and more children who were not grossly deviant. Rivalries developed among the disciplines within some of the clinics and even between clinics and other self-sufficient agencies.

Satisfaction with diagnosis emphasized the importance of treatment. Interest in treatment was stressed further as knowledge of the nature of the difficulties of children became diffused beyond the profession of psychiatry. By the end of the 20's, a good deal of work was being done with parents. Initially, the purpose was to prevent parents from interfering with the efforts that were made to benefit the child. This sometimes took the form of treatment of the parent which might be attempted by whichever member of the clinic team had developed skill in psychotherapy. Case-

1 .

workers and psychologists, as well as psychiatrists, were turning to personal analysis as a measure of enhancing their skill in therapy, and the role of the psychiatrist as director or leader of the clinic group was sometimes challenged.

Skills in individual psychotherapy did develop. Americans went to Europe to learn the techniques of the analyst, and during the 30's many European analysts came to the United States. In this country effective treatment procedures were developed by child psychiatrists who were not identified with the analytic movement. Analyst and non-analyst have worked side by side in the United States and sometimes within the same clinic. We are still progressing in our techniques of individual treatment of children steadily enough so that it is yet too early to outline exclusively what should be the training of a child psychiatrist and what his treatment techniques. There is, however, general agreement about a good deal that he must know and about the training and working experiences that he must have.

As the contribution of the clinic centered increasingly around the provision of psychotherapy, the contacts of the clinic staff became more limited to members of the patient's family or those social workers in foster care agencies who had direct responsibility for the child. As mentioned above, the professionals in other agencies or institutions became informed on the psychological aspects of deviations in growth and development and did not call upon the clinics as frequently for diagnostic assistance. They resented the efforts of clinics to direct. their practices. Clinical workers also began to appreciate the complexity of other professional tasks and became cautious about assuming responsibility for recommendations, the effectiveness of which rested with the work of another agency.

Work became oriented around the diagnosis and treatment of the child. There was a period when certain clinics saw their tasks as the treatment of the child-parent relationship. This gave way to a recognition that treatment was with the individuals who were in relationship to each other, with the child as the patient. A variety of approaches developed in considering the

job with the parent. While some clinics outlined their task as the treatment of the parent, others viewed work with the parent as a casework service. I believe that in the majority of clinics today the procedures which are carried out with parents are materially influenced by a primary concern for the successful treatment of the child. One of the major advances in modern psychiatry has been the understanding of the importance of the influence of other members of the family upon a patient. This has developed from the work of the child guidance clinics.

As clinical contacts in child psychiatry became more circumscribed to the child and his parents or members of his immediate domestic environment, private office work became feasible. Private practice had to await the development of clinical skill and in turn understanding of the remainder of the medical profession and the lay public so that services would be solicited. Early attempts were made to treat children individually with a minimal amount of work with the parents. Private practitioners, including child analysts, quickly recognized the importance of doing some work with parents. It may indeed be that the most important influence in the growth of private child psychiatric practice was the general acceptance which psychiatry enjoyed following World War II. I believe that private practice was an outgrowth of the circumstance that procedures involved in the treatment of the child and his guardians could be encompassed physically within the private office.

It remains for experience to determine whether individual practice, which may indeed include the collaboration of other disciplines, will become a common method for the provision of child psychiatric services to those familes who can afford a private fee. Today there are adherents of the private office arrangement and adherents of the clinical method, each of whom considers his way of practice to hold forth advantages. The answer to this question may rest upon personal preference. It may be determined economically. It may be influenced by forces which bear on the practice of medicine generally which we cannot now foretell. In any event, private practice in child psychiatry has become a reality since World War II even as the clinics themselves have become more numerous.

With the growth of child psychiatry it was inevitable that professional associations developed. The National Committee for Mental Hygiene had benevolently fathered the development of the clinics with the financial aid of the Commonwealth Fund. During World War II the Division of Community Clinics of the National Committee for Mental Hygiene organized meetings of the clinical directors to elicit their participation in the management of the affairs of the clinics. Practice and procedures were discussed and soon the annual assembly of clinic personnel included meetings of social workers and psychologists. Following the war, it was evident that the growth of the clinics would be so rapid and so extensive that coordination through personal visits and interest by members of the staff of the National Committee for Mental Hygiene would be difficult.

The need for authoritative definition of standards for practice and training was emphasized as new clinic boards were being organized and staff positions created which could not be filled readily. At a meeting of clinical directors convened by the National Committee for Mental Hygiene a decision was made to create the American Association of Psychiatric Clinics for Children (A.A.P.C.C.).

This Association was initially concerned with protecting the level of child psychiatric clinical practice. The policy was to uphold the professional standards of the professional disciplines which worked collaboratively in the clinics. Social casework had clearly defined standards for training and experience. They were established by the American Association of Psychiatric Social Workers' (later A.A.S.W.). Clinical psychology was actively establishing itself as a clinical and professional discipline and shortly declared its training requirements which were implemented at the graduate level in universities. Child psychiatry had no defined standards for the determination of competence of its representatives beyond the achievement of certification by the American Board of Psychiatry and Neurology which was in adult or general psychiatry. The Board had established the precedent of accepting a satisfactory year of training in a children's clinic as the third of the 3 years of required academic training.

The A.A.P.C.C. defined requirements for the training of child psychiatrists who were to work in the member clinics. It also outlined requirements for clinics that were to conduct training which would be approved by the Association. Because these were the only existent standards, other organizations supported these requirements, and A.A.P.C.C. standards came to have an influence in American psychiatry beyond that which was initially conceived. Review and approval by the Association, however, could be extended only to those clinics which were interested in being identified with the Association and involved only personnel employed in the clinics.

During the years following World War II, there was controversy over the opinion held by child psychiatrists that special training was required to do adequate psychiatric work with children. The creation of a Committee on Child Psychiatry within the newly formed Group for the Advancement of Psychiatry, the establishment of a Committee on Child Psychiatry in the American Psychiatric Association, the naming of a Section in the APA and the establishment of a Committee on Training in Child Analysis in the American Psychoanalytic Association were acknowledgements of the discreteness of the field. These units created a forum for child psychiatrists who were in individual practice, and included as well the psychiatrists from the clinics.

A recognition that the scope of child psychiatry went beyond the organized clinics, including individual practice and some individual teaching appointments, brought forward an interest in an association of child psychiatrists. Concomitantly, sentiment developed in certain areas of organized general psychiatry that within the association of clinics the interests of the child psychiatrist might be subjugated to a multidisciplinary majority. The American Association of Psychiatric Clinics for Children itself recognized that child psychiatry differed from the other professional disciplines in that it had no set of standards

)

for training which was declared and upheld by a group within its own discipline, not officially associated with A.A.P.C.C. and which could serve as a standard for the evaluations conducted by A.A.P.C.C.

These influences and a desire for academic interchange within a professional group limited to the child psychiatrists led to the organization of the American Academy of Child Psychiatry. The Academy has established criteria for the invitation of child psychiatrists to its membership. It has been considering a set of standards for training. It is in the process of determining how actively and extensively its membership wishes to assume leadership in American child psychiatry.

A year ago the Council of the APA endorsed, on the joint recommendation of its Committees on Child Psychiatry and on Standards for Hospitals and Clinics, a statement that child psychiatry was a subspeciality of psychiatry and that competence called for special training. The APA later accepted in principle a statement of Standards for Training that called for 2 years of specialized training in child psychiatry in addition to 2 years of training in general psychiatry for those who would work with children.

As early as 1948, sentiment was advanced for the establishment of certification in child psychiatry. The American Board of Psychiatry and Neurology looked favorably upon the proposal and consulted a group of child psychiatrists. Possibly because opinions on procedure were not consistently supported, the Board did not act at that time.

In the summer of 1957, the matter of certification in child psychiatry was again raised by the American Board of Psychiatry and Neurology. Suggestions had been advanced that there be an independent board in child psychiatry. This might have been a difficult proposal for which to obtain the approval of the Advisory Board for Medical Specialties which has declared itself against the unnecessary recognition of additional specialties in the field of medicine. It appeared that there was reasonably general accord among child psychiatrists that certification be carried on under the authorization of the parent American Board of

Psychiatry and Neurology. The arrangement declares child psychiatry as a sub-

specialty of psychiatry.

After consulting a number of individuals in the field of American child psychiatry, several recognized leaders were summoned to a meeting to consider the advisability of recommending the establishment of certification procedures. Following the favorable outcome of this meeting, a Committee on Child Psychiatry consisting of 6 members was appointed by the American Board of Psychiatry and Neurology. Meanwhile, the Advisory Board for Medical Specialties had been asked to approve the project. The Advisory Board authorized the American Board to undertake steps to evaluate authoritative opinion in child psychiatry and notified the Boards in the other specialties.

The Committee on Child Psychiatry met in June, 1958, with the president and secretary of the American Board of Psychiatry and Neurology, and drew up a statement of requirements and of procedures for examination and certification of child psychiatrists. The American Board of Pediatrics requested further consultation, and at a meeting of representatives of that Board and the American Board of Psychiatry and Neurology, an agreement was reached to include a pediatrician on the Certifying Committee. The pediatrician would act in an advisory capacity and would not serve in the examination of candidates. Members of the Committee on Child Psychiatry were among the representatives of the American Board of Psychiatry and Neurology who attended the meeting with representatives of the Board of Pediatrics. The statement of policies regarding training, application and examination was eventually approved by the various Boards and the Advisory Board for Medical Specialties.

The American Board of Psychiatry and Neurology then established a Committee for Certification in Child Psychiatry. This was in February, 1959. The brochure of Information for Applicants Applying for Certification in Child Psychiatry states that

This was done to establish officially the field of child psychiatry as a definite area of subspecialization in psychiatry and to provide a means of identifying the properly trained, experienced child psychiatrist from those who claimed proficiency in this field without adequate background and qualifications.

## The brochure states further:

The actual mechanics of certification of qualified candidates and the establishment of basic policies has been delegated by the American Board of Psychiatry and Neurology to this special committee which will operate under the supervision of the parent board. This Committee on Certification in Child Psychiatry consists of six certified child psychiatrists appointed by the Board and responsible to the Board. As a Committee of the Board, it operates under all the basic policies established by this corporation.

Psychiatrists who have been continuously in the full time practice of child psychiatry since July 1, 1950 or before may apply for certification on record (without examination). If the major interests and activities of their practice is with children or adolescents, this will be regarded as full time practice of child psychiatry. Applicants must have been previously certified in psychiatry by the American Board of Psychiatry and Neurology except in those instances where this requirement has been waived by the Board for good and sufficient reasons.

This certification is for those who are currently in the specialty of child psychiatry and not for those who have been in the field in the past. Applicants who have previously practiced in the field of child psychiatry but who have left this specialty for other types of practice must show that in the two years preceding application their major interests and activities have been in the field of child psychiatry.

Those child psychiatrists not qualifying under the above rules and regulations will be considered as applicants for certification by examination. Their major interests and activities in their current practice must be devoted to psychiatric problems of children and adolescents. Should they have left the field of child psychiatry for other types of practice but otherwise fulfill the training and experience requirements, they must show that the two years prior to application have been in specialized practice in child psychiatry.

To qualify for examination candidates must have 6 years of psychiatric training and experience. Two years shall have been satisfactory training in child psychiatry in programs acceptable to the Committee on Certification. The statement is included in the brochure that

It is advisable that those seeking the certificate of specialist in child psychiatry who receive their primary training in psychiatry should have training in the pediatric aspects of general medicine. Such training may be offered in lieu of two years of practice experience.

Certification will identify the properly trained and experienced child psychiatrist who has been actively engaged in the field. It will be necessary to establish a basis for the evaluation of training and of the settings from which training will be approved. This will be an early task for the Committee on Certification in Child Psychiatry.

It is too early to anticipate fully the influence certification will have in the field of child psychiatry in relation to practice and to professional organizations. The competence of practitioners who offer their services to children should quickly assume a generally adequate level. Influences in relation to professional organizations will manifest themselves more gradually.

The American Psychiatric Association does not have standards for outpatient clinics in either child or adult psychiatry excepting as these clinics are associated with a mental hospital. There is a Committee on Standards for Hospitals and Clinics. Outpatient clinics currently achieve approval as they meet the recommendations for mental hospital personnel and the approval of the hospital administrator. There is need for the declaration by the American Psychiatric Association of standards for outpatient clinics which operate independently.

The A.A.P.C.C. will now be in a position to support the standards for training in child psychiatry determined by the Committee on Certification in Child Psychiatry of the American Board of Psychiatry and Neurology rather than establishing require-

ments of its own. Requirements for certification are similar to those outlined for the director of a clinic approved for training with A.A.P.C.C. They are higher than those enforced in evaluating the competence of the psychiatric director of a clinic asking consideration for membership. If standards for training in child psychiatry become sufficiently well defined, A.A.P.C.C. will be in a position to place its major emphasis on the composition and collaborative working arrangement within the clinic group.

The Academy of Child Psychiatry has membership requirement which are somewhat more exacting than those defined by the Board. More working experience is necessary, and the candidate must have had a primary and long continued interest in child psychiatry. At present, certification by the American Board of Psychiatry and Neurology is a membership requirement for those individuals who completed their training after January 1, 1946. The Academy has not yet had an opportunity to consider whether it will require certification in child psychiatry of those who are to be invited to its membership.

In half a century child psychiatry has become established as a field of medical practice within the specialty of psychiatry for which special training is necessary to acquire competence. Standards and procedures for the evaluation of candidates for certification and their training will be refined as examinations are conducted. Standards will be developed also for the evaluation of the setting in which satisfactory training can be obtained. The professional organizations concerned with the field of child psychiatry will continue to provide the forums from which knowledge and recommendations for standards of practice and training will evolve.

# THE MIND-BRAIN PROBLEM AND HUGHLINGS JACKSON'S DOCTRINE OF CONCOMITANCE

## MAX LEVIN, M.D.1

# PART I: WILL, VOLUNTARY AND AUTOMATIC FUNCTION

The first object of this paper is to indicate the value of Hughlings Jackson's "doctrine of concomitance" in regard to the relation of mind and brain. Of all who have tackled this thorny problem, it seems to me that Jackson was the most realistic.

More specifically, I shall consider those cases in which the patient has lost the ability to perform an action on command, *i.e.* voluntarily, though he can still do it spontaneously or automatically. I hope thereby to achieve a double purpose: to consider one aspect of mind, namely, will or volition, and to point to a second great contribution of Jackson's, his concept of "reduction to a more automatic condition."

In his work on aphasia Jackson showed that it is not words that are lost, but the use of words in particular contexts. A favorite example was the man with motor aphasia who cannot say "No" on command, but can say it spontaneously. Thus if asked a question calling for a negative reply, he answers "No." And when he is emotionally excited, as when he sees his child creeping too close to the fire, he shouts "No, no, no."

Here, then, is a man who cannot say No when he "wills" to, but can say it spontaneously or automatically. Does this mean that there are centers for speech, which operate under the command of higher centers for will and mind, and that when we undertake to say or do something, suitable impulses pass down from these higher psychic centers to lower speech and motor centers? Such an explanation is attractively simple and might appeal to a first year medical student. It should not appeal to mature physicians, but it does to some, for here is what an outstanding neurologist once said. Speaking of epileptic twilight states (in the days before electroencephalography) he said they are also called psychic equivalents, because "they are the result of a discharging lesion in psychic centers, just as grand mal is the result of a lesion in motor centers." He assumed that there are centers for the higher and more abstract function, mind, superior to and in command of lower centers for the more concrete activities, movement and sensation.

Tackson opposed such a view. He held that the entire brain is sensorimotor, not just the areas so designated by conventional neurology. He denied that the highest cerebral centers are basically different from lower centers. He said it would be incredible if, as one passed upward in the hierarchy of levels, one came suddenly upon centers constituted differently from those below. On the contrary, higher centers are constituted like lower centers, being only more complex. He regarded the central nervous system as a mechanism for the coordination of impressions and movements. (By "impressions" he meant impressions made on receptor organs.) Spinal centers achieve a relatively simple coordination, while higher centers achieve one that is more complex. All cerebral action is reflex, even in the highest cerebral centers, which he regarded as the "organ of mind." Of course, his conception of "reflex" is broader than that held by some neurologists.

# REFLEX ACTION IN THE HIGHEST CEREBRAL CENTERS

Some neurologists would limit the term reflex to "automatic fixed inborn responses" of subcortical structures. These responses are relatively automatic and inflexible, "a necessary consequence of anatomically prearranged fixed nervous channels." By contrast, responses from the cortex are variable, flexible, relatively unpredictable. Neurologists of this school of thought deplore Pavlov's term, conditioned reflex, which "leaves the word 'reflex' with no meaning whatever, except response to stimulus."

<sup>&</sup>lt;sup>1</sup> From the Department of Neurology and Neurosurgery, the New York Medical College, Flower and Fifth Avenue Hospital, New York, N. Y.

(Quotations in this paragraph are from Denny-Brown(1).)

Elsewhere I have tried to show why Jackson's view is preferable(2). As an example of reflex action in the highest cerebral centers, the following incident is submitted.

Driving on a quiet country road, alone in my car, I was deep in thought. About to overtake a car just ahead, I sounded two sharp warning notes on my horn; I then passed the car, still deep in thought. A few moments later I became aware that I was humming the opening theme of Beethoven's Third Symphony, the theme that immediately follows the two great staccato opening chords. My curiosity aroused, I wondered why that particular theme had intruded itself on me at that moment. Reviewing the antecedent situation, I remembered the two staccato notes of my horn. which had "reminded" me (without my being aware of it, for I was deep in thought at the moment) of the two opening chords of the symphony. The theme followed in due course, and I hummed it unconsciously until the fourth or fifth bar, when suddenly I noticed I was humming. The humming was a reflex, a response to the two notes of the horn.

This incident shows two things. First, mentation can be unconscious (not that this proposition today stands in need of proof). Second, mental processes are reflex, their unpredictability notwithstanding. No one can predict the result, if any, that will ensue when a driver in deep reverie honks his horn twice. But the response in this instance, the humming of the theme, was clearly a reflex. It is an example of "chaining," a term used in psychology to denote the process whereby one response provides the stimulus for the next, as in reciting a poem from memory, when each line as it is spoken brings the next one to mind. An unpredictable response is no less reflex than a predictable one; it is only more complex.

But, really, is there such a thing as unpredictability? If we knew everything about the brain, and knew its precise state down to the smallest detail at a given moment, we would be able to predict the response to any stimulus, no matter how complex. Unpredictability is but a measure of our ignorance.

#### THE DOCTRINE OF CONCOMITANCE

With his materialistic view of the highest cerebral centers, according to which they resemble the lower spinal arcs in basic constitution, differing only in being more complex, how did Jackson relate mind to brain? Obviously we need a brain to think, but it is we and not the brain that thinks. The brain is merely a mass of tissue. Tackson asserted that the question is insolible. One can only say that mentation attends cerebral function, is "concomitant" with activity of cerebral tissue. Beyond that we cannot go. We cannot say how a material thing, tissue function, is transmuted or gives rise to an immaterial thing, mental function.

Thus, speaking of "the relation of consciousness to nervous states" (i.e. physical states), Jackson said(3):

The doctrine I hold is: first, that states of consciousness (or, synonymously, states of mind) are utterly different from nervous states; second, that the two things occur together—that for every mental state there is a correlative nervous state; third, that although the two things occur in parallelism, there is no interference of one with the other. This may be called the doctrine of Concomitance.

#### Again he said(4):

We cannot understand how any conceivable arrangement of any sort of matter can give us mental states of any kind. . . . I do not trouble myself about the mode of connection between mind and matter. It is enough to assume a parallelism. That along with excitations or discharges of nervous arrangements in the cerebrum, mental states occur, I, of course, admit; but how this is I do not inquire; indeed, so far as clinical medicine is concerned, I do not care.

Sherrington(5) concurred in this view. We return to the aphasic who cannot say "No" when asked to, yet says it spontaneously. Saying "No" or any other word, indeed performing any act, is a response to a stimulus. The stimulus is the situation that evokes the response. We must consider the response as part of a totality that in-

cludes the antecedent stimulus. Since no two situations are exactly alike, there is no limit to the number of neuronal patterns (engrams) for the saying of "No." These engrams, to be sure, all converge upon a final common path, but before they do so they differ in the position they occupy in the hierarchy of levels.

The engrams for the voluntary "No" are on a higher level than those for the spontaneous or automatic "No." Voluntary function is more complex than automatic function. When a man says "No" because you have asked him to, his response is a calculated act. By contrast, when he shouts "No" because his child is too close to the fire, his response is automatic; he speaks "without thinking"; the word comes to his lips automatically.

In motor aphasia there is disturbance of higher pathways, but little if any of lower pathways. Voluntary function is lost while automatic function is preserved. This is what Jackson called "reduction to a more automatic condition."

There is no circumscribed center for will. Will cannot be considered apart from the thing that is willed. When the aphasic tries unsuccessfully to say "No" on command, will is a mental function concomitant with activity of certain engrams, those engrams that represent the situations that can no longer rouse the No-saying mechanism.

Jackson had the useful habit of studying a physiological principle as it manifests itself in a wide variety of clinical disorders. I will give two further examples of loss of voluntary function with preservation of automatic, one of them being less complex than speech, the other more complex.

Hysterical astasia-abasia is the less complex example. Here the patient cannot walk when you ask him to, or when he "wants" to, but under emotional stress, as when the building is on fire, he walks and runs without let or hindrance.

The more complex example is seen in toxic delirium, when the patient, being disoriented, cannot name your vocation on command, yet spontaneously he addresses you as "Doctor" (6). (This phenomenon is not elicitable in every case, nor every moment in the same case.) In many cases I have made the following experiment. The

delirious patient addresses me as "Doctor." A moment later I ask him what my occupation is, and he replies that he does not know or else, not knowing that he doesn't know, he answers incorrectly. We then continue our conversation until the next time he addresses me as "Doctor," whereupon I again ask him the question and again he fails. This can occur many times in a single interview.

In several striking instances the patient addressed me as Doctor in the very sentence in which he confessed his ignorance. Thus, one patient, when asked what my work is, replied, "I wouldn't know, Doctor—is it painting and decorating?

This phenomenon in delirium parallels the aphasic's difficulty with "No." To say "No" on command is a highly voluntary act. So also is the patient's reply to the question "What is my occupation?" Answering this question is a studied and calculated act. By contrast, when the aphasic shouts "No" under emotional stress, or when the delirious man spontaneously and unwittingly greets you by saying "Good morning, Doctor," the speech is automatic; the words issue automatically.

The parallel applies also to those striking instances in which the delirious patient addresses you as Doctor in the very sentence in which he voices his ignorance of your occupation. The parallel is with the aphasic patient who utters a word spontaneously at the very moment he is confessing his inability to say it. Thus, striving to say No on command, the patient may give up in despair and cry out, "No, I can't."

This remarkable parallel between a "physical" symptom, the aphasic's inability to say something, and a "mental" symptom, the delirious man's inability to name your vocation, is further indication of the soundness of Jackson's argument that higher and lower cerebral centers obey the same laws, that they differ only quantitatively and not qualitatively.

To further understand reduction to a more automatic condition, we must consider its opposite. In some diseases it is the automatic functions that are lost. A useful contrast is between hysterical astasia-abasia and tabes dorsalis. The hysteric cannot walk on command, but can walk and run when

the house is on fire. The opposite is true of the tabetic, for he cannot walk automatically. In order to walk he must drop all else from his mind and concentrate on floor and feet, carefully noting every step. In a burning building he would be helpless. He is the victim, not of reduction to a more automatic condition, but of what we may call "loss of automatic patterns," which are lost because of lesion of lower spinal arcs. In hysteria, where the disturbance is in the highest cerebral centers, these lower arcs are intact and will go into action in response to instincts of an imperative nature.

#### PART II: MEMORY

The role of the limbic system in behavior has received much attention lately, thanks in great measure to the notable work of MacLean(7) and to psychological studies in man by Penfield and Scoville and their associates. Among other things it has been shown by Scoville and Milner(8) and by Penfield and Milner(9) that the hippocampus and related structures play an important role in memory, and that in bilateral lesion of the hippocampus and hippocampal gyrus there is profound loss of recent memory.

These findings are of great importance, for they show that the hippocampal areas are essential to adequate memory function. Penfield and Scoville are careful not to say that there is a "center for memory" in these areas. But Penfield makes some statements that appear misleading. Thus in his paper on "Memory Mechanisms" (10) he says:

The records of an individual's thinking lie dormant in the patterns of his temporal cortex until he activates them. . . . Whenever a normal person is paying conscious attention to something, he is simultaneously recording it in the temporal cortex of each hemisphere. Every conscious aspect of the experience seems to be included in these cortical records.

He speaks of "the memory cortex of the temporal lobes."

In his contribution to the Ciba Symposium(11), after speaking of the "ganglionic record of past experience," Penfield says:

The nervous tissue that preserves this record constitutes a functionally separable portion of the brain since bilateral removal of the inferior mesial zone of both temporal lobes, including the hippocampal system, prevents subsequent preservation of the experience.

No one admires and respects Penfield and his work more profoundly than I do, but I submit that the passages quoted seem to suggest that the things we remember are "recorded" in the "memory cortex," that their "every conscious aspect" is recorded there, to remain in abeyance or, as it were, on file until they are needed. Nothing could be more wrong.

If, having studied maps and pictures of New York City, you remember that Manhattan is a long narrow island lying North and South, with a cluster of skyscrapers at the lower tip and another cluster near a large rectangular park in the middle, surely the seat of this memory is not the hippocampus. Or, to suppose a chess expert who is memorizing a game while playing it, it would be amazing if so elaborate a performance were mediated by so ancient and primitive a structure. The hippocampus dates back to the dawn of the forebrain and is scarcely more highly developed in man than in lower forms. To visualize and remember an elaborate spatial system must call into play a network of complex neuronal circuits in the new cortex, not the old. Moreover these circuits, or engrams, are not contained within a relatively small area of neocortex, such as the visual area, but are spread out so as to involve motor areas as well, for visual imagery involves motor as well as sensory function (12).

Just as there is no circumscribed center for will, and will cannot be considered apart from the thing that is willed, so it is with memory. Memory is an abstraction, and there is no center for it. Memory cannot be considered apart from the thing that is remembered. If you remember having played tennis yesterday, this act of memory is made possible by activation of engrams having to do with certain movements. If you remember having attended a concert the night before, there is activation of engrams correlative with auditory and visual images.

This is not to deny the evidence adduced by Penfield, Scoville and others, showing that the limbic system plays a role in memory. But we cannot say what the role is. We can only say that the limbic system somehow facilitates the activation of neocortical circuits concomitant with images and movements. Perhaps the role of the limbic system is like that of janitors and maintenance men in a university. These men heat the buildings and make them habitable, and without them the work of the university would come to a halt. But the university is not centered in them. The essence of the university is in the professors and scientists who work there.

It is a manifestation of the wisdom of Nature that she has placed the memory facilitator in the old rather than the new brain. She has put first things first, for it is more important to remember the things we learn with our old cortex. As MacLean has shown(13), the limbic system mediates behavior that insures survival, behavior concerned with feeding, self-protection and propagation. A medical student must remember that the saphenous vein lies in a certain part of the leg, but he wouldn't die if he forgot it. But it is a vital necessity for a growing pup to remember that cats have claws.

#### BIBLIOGRAPHY

1. Denny-Brown, D.: J. Neurol. & Psychopathol., 13: 52, 1932.

2. Levin, M.: J. Nerv. & Ment. Dis., 118: 481, 1953.

3. Jackson, John Hughlings: Selected Writings. London: Hodder & Stoughton, Vol. 2: p. 72, 1931-32.

4. Jackson: op. cit. Vol. 1, p. 52.

5. Sherrington, C.: The Brain and its Mechanism (The Rede Lecture). Cambridge University Press, 1934.

6. Levin, M.: J. Ment. Sci., 85: 1043, 1939.

7. MacLean, P. D., Flanigan, S., Flynn, J. P., Kim, C., and Stevens, J. R.: Yale J. Biol. & Med., 28: 380, 1955-6.

8. Scoville, W. B., and Milner, B.: J. Neurol., Neurosurg. & Psychiat., 20: 11, 1957.

9. Penfield, W., and Milner, B.: A.M.A. Arch. Neurol. & Psychiat., 79: 475, 1958.

10. Penfield W.: A.M.A. Arch. Neurol. &

Psychiat., 67: 178, 1952.

11. Penfield, W.: The Role of the Temporal Cortex in the Recall of Past Experience and Interpretation of the Present, in the Ciba Foundation Symposium on the Neurological Basis of Behaviour. Boston: Little, Brown and Co., 1958.

12. Levin, M.: Arch. Neurol. & Psychiat., 30: 848, 1933.

13. MacLean, P. D.: J. Nerv. & Ment. Dis., 127: 1, 1958.

## COMMUNITY PLANNING AS A SUPPORT TO TREATMENT 1

M. J. ROCKMORE, M.A., AND ELIAS J. MARSH, M.D.<sup>2</sup>

During World War II, the concept of limited service based on differential diagnosis eventually supplanted the early Selective Service criteria which resulted in a staggering N-P rejection rate. Psychiatric-combat first aid and the neuropsychiatric reconditioning facility replaced early hospitalization in closed wards. Finally mental hygiene units in all installations and echelons moved psychiatry out of the protective confines of the mental hospital.

The similarity with civilian problems of today is striking. As during the War, a relative handful of trained specialists inundated with an insurmountable quantitative problem, are not permitting themselves the luxury of pre-occupation with scientific problems that provide the comfort of isolation or contemplation. Although they recognize the need for basic research they have not permitted its scarcity nor the lack of sufficient genetic understanding to keep them from moving into the arena of community mental health and applying empirical knowledge to the prevention and treatment of mental disorder. For practical reasons, and in response to pressures similar to those of war-time, a variety of clinical psychiatric services are mushrooming outside the mental hospital: open hospitals with their adjuncts "day" and "night" hospitals, sheltered workshops, "half-way houses," the mental health center, mental aid fellowship groups, etc.

These practical approaches appear to have had some impact on our problems despite the increasing shortages of personnel. The statistical picture of the resident population of mental hospitals throughout the country bears witness to this fact. A few years ago forecasts of increasing needs for inpatient facilities differed only in the estimate of how many additional beds would be required. In 1956,

however, continuing increases came to at least a temporary halt. Figures for that year showed a decrease of 7,000 in the patient population. The decrease continued by another 3,000 in 1957, and preliminary figures indicate a decrease of 7,000 more in 1958 3. The really striking evidence that these decreases result from the new programs cited above, however, is the fact that the decrease in patient population has been accompanied by continued high admission rates. More patients are being admitted but as a result of the practical efforts of practical men they are no longer increasing our hospital populations.

Many more patients than ever before are leaving our mental hospitals to return to their communities—perhaps a quarter of a million a year. It is the purpose of this paper to note and to re-affirm some of the responsibilities which go hand in hand with these clinical successes. We assume that the majority of these patients leaving the hospital have achieved a degree of clinical recovery that warrants planning for some form of extramural living. It has been suggested that failure to act on early conditional release of patients will lead to chronicity, hospitalism, and continued inpatient treatment. The decision to release patients from the hospital, therefore, demands a carefully balanced consideration of the desire to avoid chronicity and the likelihood of the patient's success in extramural living. The former is largely a hospital responsibility, and the latter largely that of the community.

Historically, especially since the public clamor of the 1870's, the spotlight has been on admission procedures. The heavy emphasis of community pressure has been to safeguard individual civil rights and originated in the development of more humane treatment of persons suffering mental illness who were moving through social institutions, e.g. almshouses, to our hospitals. Too little has systematically been done as far as release procedures are con-

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Respectively: Chief, Psychiatric Social Service and Chief, Division of Community Services, Connecticut State Dept. of Mental Health, Hartford, Conn.

<sup>&</sup>lt;sup>3</sup> Council of State Governments, Sidney Spector, Director, Interstate Clearin House.

cerned. Periodically, there is furor in the Press concerning acts committed by expatients, or more recently there is a startle reaction in the general public's discovery that they are living with an "open hospital" in their midst. Generally speaking, however, hospital administrations are sorely pressed by ever increasing admissions, shortages of trained personnel, the management problems of aging buildings and equipment, the perpetual fiscal problems, and the other all too familiar details. The allocation of sufficient time and thought, not only to release procedures but to the overall community planning necessary to meet the demands of the patients returning to extramural living, rarely receives a high priority.

A major obstacle to planning for adequate community services is the question of who is going to pay the bill. Despite tremendously increased appropriations of public tax funds, we still find ourselves administering programs which do not enable us to utilize our professional knowledge to the fullest extent. Realistically we simply cannot expect indefinitely continued budget increases to expand our programs, even if training facilities were turning out the skilled manpower necessary for such expansion. Our only alternative, therefore, is to make maximum use of our current resources and to find new ways of realigning them in the light of our understanding of the needs of our patient population.

This suggestion is not offered as being either new or revolutionary. In relation to the problem of aging it has been said, "If basic community services were improved then psychiatric clinics would be really utilized as such"(1). In another study it appeared that 4 out of 5 patients treated in a child guidance clinic over a period of 25 years might have as appropriately been treated in non-psychiatric agencies (2). A study of psychiatric clinics in New York City some years ago was subtitled, "A Study Toward the Prevention of Waste" (3). These three by no means unique observations cover the entire range of psychiatric patients and all point to the need of a closer rapprochement with community resources.

"Community resources" is a tidy concept which covers a wide range and variety of efforts. The very tidiness with which it is articulated belies its complexity, its essence, and the creativity inherent in the utilization of its possibilities. Webster gives us clues in the literal definition—a resource is a new or reserve source of support, a means of resort in exigency, or a stratagem; a community can be society at large, the public or people in general, and in a more restricted sense, it is the people of a particular place or region. This frame of reference excludes the stereotype and places a heavy burden of responsibility on any professional at any level of operation who seeks to identify and employ "community resources" in his endeavors.

For our present considerations we will not plan to emphasize the mental hospital "community." Rather we will here point up examples wherein exploratory efforts in "society at large" may lead to more constructive sources of support to patients who have improved to the extent that they should be encouraged to deal with increased reality demands.

This approach is admittedly artificial because the mental hospital itself should be truly a community resource. Proper planning for the discharge of a patient from the hospital and his adequate convalescent care is best started at the time of his admission (4). This, of course, is primarily a clinical responsibility as it relates to the individual patient. We are here more concerned with the type of broad planning and policy making that involves organized Federal, interstate, state, or local activity. Any or A. all of these may have an impact on clinical treatment. It is the responsibility of the psychiatrist both as a clinician and as a citizen to identify and take advantage of the community resources that do exist, and to make known the needs for hitherto nonexistent community resources that might be desirable or even essential for adequate treatment of patients. When these new resources can be provided only by organized community effort it is further the responsibility of the psychiatrist to provide the leadership that will ensure their establishment in accordance with the best professional knowledge and practice.

An example of the kind of planning that must be done at the Federal level is in the area of Public Assistance. Many a psychiatrist has found himself in the following dilemma: A patient has shown considerable improvement, and in the best clinical judgment the next step in treatment calls for a living arrangement in the community. The patient is without economic resources and requires economic subsidy. The Federal Handbook of Public Assistance Administration indicates that "a patient on conditional release from a public mental hospital where he was an inmateis not an inmate of a public institution if he is free of controls by the hospital, other than professional help or guidance relating to his mental condition." This theoretically would make him eligible for Public Assistance. Nevertheless, in many states the procedure is such that the patient who requires aftercare supportive treatment will be discharged prematurely to become eligible for public assistance. The alternatives in most instances are retaining the patient for continued hospitalization, or discharging him and hoping that relapse and re-admission will not occur. Ideally, one would like the reality planning to provide for continued outpatient treatment with the public assistance participation as an integral part of the plan. Too frequently this is not possible. Where it is possible, the timing factors so important in the release of patients, become so complicated by the administrative procedure that the optimum point at which release should take place cannot be adequately considered.

Much of this maze of planning stems from the original exclusion of "any individual (a) who is a patient in an institution for tuberculosis or mental diseases or (b) who has been diagnosed as having tuberculosis or psychosis and is a patient in a medical institution as a result thereof." The language of this aspect of the law lends itself to detailed analysis, interpretation, judicial conjecture, and heated argument. We needn't here point out that "psychosis" is not a synonym for "mental illness."

Psychiatrists working in state programs

are acutely aware of these ramifications. At the recent annual conference of the State and Territorial Mental Health Authorities with the Surgeon General of the Public Health Service, the following recommendations were passed:

That the Secretary of Health, Education and Welfare propose to the Congress legislation to amend existing Social Security Laws so that they do not discriminate against persons with any type of illness mental or physical.

This resolution is the result of indiv\_dual psychiatrists moving from official positions. By the nature of this particular conference, the American Psychiatric Association as such was not a participant although its Medical Director was present as an invited guest. There is, however, an important and valid role for an Association such as the APA to play in the area of Federal legislation. An Advisory Council of Public Assistance, established by law, is reviewing aspects of the Federal Public Assistance Program. This group is required to report by January 1, 1960 on needed changes in the Social Security Act. Its 12 eminently qualified members do not include a psychiatrist. However, official liaison from this organization would offer ample opportunity to present to the Council the problem of the mental patient.

The possibility of participating in planning on the national level by a national professional "community" such as the APA, can be extended to include many other activities. For example, the Children's Bureau, which lacks a psychiatrist on its staff, notes little information regarding the need for psychiatric services for children. Yet state mental hospitals are regularly used as a resource for children(5).

Certain kinds of problems require planning among the states independent of participation by the Federal government; for example, planning for a mentaly ill resident of one state who finds himself somewhere else in the country, or the establishment of regional educational services to provide more personnel in scarce categories. In various ways states have come together for inter-state community planning—the Southern Regional Education Board, the Western Interstate Commission on Higher Education, and the Northeast

<sup>&</sup>lt;sup>4</sup> This statement appears repeatedly in the "Definition" portion of various "Titles" of the Social Security Laws.

State Governments Conference on Mental Health. Meetings of these groups provide striking illustrations of the varieties of programs designed to solve basically similar problems.

Tangible evidence of the real potentialities for successful planning of such a group as the Northeast State Governments Conference on Mental Health is to be found in the remarkable legal document known as the Interstate Compact on Mental Health (6) which was conceived and born in this Conference. Extremely difficult legislative and administrative problems, at times thought to be insoluble, were transcended to forge an instrument which has added a great deal for the clinician considering the best interests and welfare of his patient. It is now possible in those states which are signators of the Compact to plan for a patient on the basis of his medical needs rather than on the basis of a legalistic concept of place of residence or settlement.

At the level of the state "community," the problems of planning are compounded. Federal legislation is drawn along broad lines and in accordance with broad general principles to allow for the translation to meet the needs of individual states. Interstate planning too is limited to special circumstances and is framed in general terms. State planning, however, has to deal with the details of program activities in the specific requirements of the individual state.

It is estimated that in 1957 the total operating expenditures for patients in state mental hospitals reached \$732.2 million. This represents an increase of 130% in expenditure in 10 years. During this period hospital populations increased by 13.4% and first admissions by 23.7%; discharges increased by 85% but re-admissions increased 100%! State community mental health services from 1952 to fiscal 1957-58 increased from \$5.9 million to approximately \$27 million (7). These are rough figures introduced only to give some gross factors which need to be taken into account in state planning. The most valid trend these complicated data reveal is the increased movement of the patient population to and from state hospitals and the recently increased expenditure for "community services."

State responsibility has been with few exceptions affixed by practice, to inpatient care. That is, the objective of state hospital programs and hospital administrators has largely been the care of the patient to the point of clinical improvement where he could return to the community. In this context, return to the "community" might include "direct discharge," return to court, prison or jail, discharge against medical advice, unauthorized absence, voluntary separation, or some manner of conditional release. Where hospitals have had clinical services in the community, they were usually available for a percentage of "convalescent status" or "extended visit" patients who remained "on the books." The movement into community mental health services by state government is beginning to change this orientation.

The stimulus of the National Mental Health Act did a great deal to break down the planning isolation of state departments in the mental illness field. Committees and Commissions were developed. Commissioners of Mental Health met with their opposite numbers in Health, Education, Welfare, Corrections, Labor, Finance and others to plan for services in the community. Mutual and related problems have been brought into a common forum. The mental hospital patient in this group is seen in his social context rather than in an acute phase of his illness. The essential problem of relating these to-be-defined services to local voluntary and municipal agencies began to come under discussion. Simultaneously the "open" hospital, long dormant in this country, was given impetus. We are also, with less fanfare, beginning to see an increase in the utilization of the voluntary commitment. It has been said that the "open door" is really the prelude to the "revolving door."

Further planning in fields other than those specifically identified as mental health, needs the guidance and assistance of psychiatrists at the state level. Research under essentially psychiatric auspices has been largely responsible for demonstrating the potential evils of many long-established practices in the care of orphaned infants. Adequate planning of our state child welfare programs in the area of adoption and

foster home practices should have the benefit of psychiatric guidance. These are activities in community planning of major importance to our society as a whole.

Planning is now actively under way for the 1960 White House Conference on Children and Youth. Nationally there are psychiatrists involved in the planning and direction of the conference. The organized psychiatric community at the state level, district branches of the American Psychiatric Association for example, should be active participants in the state's planning for this Conference.

At the local community level there is evidence that efforts(8) of mental health education are beginning to take root. We see this in the interest of local communities and agencies who are approaching our hospitals asking for opportunities to participate in planning for patients who are returning. These approaches are from organized groups such as Councils of social agencies who have an awareness of the problems and are expressing some degree of responsibility for them. We hear reports of programs utilizing public health nurses (Ga., Ky.), County Health Departments (Fla.), and County Welfare Departments (Kan.). There are also continuing efforts <sup>5</sup> to involve the general medical practitioner in various phases of aftercare. The impetus of the Office of Vocational Rehabilitation is beginning to be felt and the Hospital and Community Services Branch of NIMH has also stimulated activity. The various community mental health acts in states have emphasized state-local fiscal participation usually under defined public and voluntary auspices. These resources have undoubtedly resulted in an increase of facilities, so that more service is available to more people. Perhaps it is too soon to inquire or perhaps it is too audacious a question, but we can't help wondering to what extent these services are related to community problems. We are suggesting that the heavy emphasis has been on matters pertaining to organization, e.g. financing, personnel, and not sufficient emphasis has been given to planning.

#### Summary

To recapitulate, the necessity for adequate planning is justified not only by current scientific knowledge that indicates its validity, but also by the practical necessity for making the most efficient use of any and all available resources.

When we total our current scientific knowledge we hear that "much of the disability in mental illness is superimposed by social and treatment mechanisms and is preventable and reversible" (9). A review of financing (tax funds supply probably 90% of the budgets for services) tells us that "discussion focuses on assertions that the states have reached their taxing limits" (10). When we examine our personnel picture and the training and recruitment prospects (11) we find that it will take all our ingenuity to stand still. These are sobering and responsibly drawn conclusions. They indicate that we cannot expect more of what we have, without limit. We cannot assume that our currently uncoordinated efforts are making maximum use of existing facilities. We must continue to discover and make creative use of related facilities which can contribute to the solutions of our problems.

This assumes that we have defined our problems in both qualitative and quantitative terms; that we have an appreciation of our resources and that the means of communication exists to consider getting the two together (12). This is a large assumption. Nevertheless it is the only base on which planning can define and consider the issues. The alternative is to continue our buckshot approach of more of the same, in the hope that if some is good, a lot is better.

Planning can start with the individual practitioner out of whatever professional discipline he represents. He is in a position to appreciate the needs evidenced in the individual case. Through his relationship with his colleagues in membership organizations or through hospital and agency structures these individual needs become cumulative and are communicated. (We have herein noted how this chain reaction can move from the National scene to the clinical decision.) As the needs of individuals become cleatities in the professional decision.

<sup>&</sup>lt;sup>5</sup> Through the Ad Hoc Committee on General Practice of the APA in Cooperation with the American Academy of General Practice.

and implement services to meet these needs. From private practice case planning up the line to broad program planning, reality factors must be identified and met. The reality variables may well be decisive in determining whether or not our technical skills will have an opportunity to deal with personality pathology or its manifestations!

#### BIBLIOGRAPHY

- 1. Legislative Document (1956) No. 33 N. Y. S. Joint Legislative Committee on Problems of The Aging.
- 2. Some Aspects of Child Guidance Clinic Intake Policy and Practices, Public Health Monograph No. 42.
- 3. The Functioning of Psychiatric Clinics in New York City, N. Y. C. Committee on Mental Hygiene of the State Charities Aid Association 1949.
  - 4. An approach to the Prevention of Dis-

ability from Chronic Psychosis, Milbank Memorial Fund, New York, 1958.

- 5. Inglis and Marsh: Am. J. Orthopsychiat., 28: 4, Oct. 1958.
- 6. The Interstate Compact on Mental Health; Rockmore and Blasko, State Government, Sept. 1957. The Council of State Governments.
- 7. Tax and Fiscal Policy and State Mental Health Programs, Sidney Spector, Address to Mental Health Commissioners, Oct. 18, 1958.
- 8. Oettinger, K.: J. Psych. Soc. Work: Apr. 1954.
- 9. New Methods and Changing Philosophies in Services to Psychiatric Patients, Before, During and After Hospitalization. Robert C. Hunt, M.D. Proceedings Conference on After-Care Service, Uniontown, Pa. 1958.
  - 10. Spector, ibid page 8.
- 11. Blain, D., and Robinson, R.: NYS J. Med., 57: 2, Jan. 1957.
- 12. Greving, Frank T.: Ment. Hygiene, 42: 4, Oct. 1958.

# HIGH DOSAGE CHLORPROMAZINE THERAPY IN ACUTE AND CHRONIC SCHIZOPHRENIA

R. H. V. OLLENDORFF, M.R.C.S., L.R.C.P., D.P.M.<sup>1</sup>

In a number of "double-blind" studies on chlorpromazine, reviewed by Freeman (1) it was found that the efficacy of tranquilisers like reserpine and chlorpromazine in the treatment of acute and chronic schizophrenia cannot be doubted. Pioneer trials were described by Kinross-Wright (2), D. Goldman(3), and A. A. Kurland (4), and the results of these authorities were confirmed as most satisfactory.

In Freeman's review(1) three dosage schedules are discussed: Low (150–400 mgs. chlorpromazine daily); Moderate (500–900); High (1000 and over daily).

In the last, Kinross-Wright's intensive treatment in rapidly increasing doses (up to 4,800 mgs. daily for 8 to 10 days), is especially relevant to the working out of the method, described below. In his review, Freeman thinks that the results are equally good in all 3 levels but that the figures for chronic schizophrenics are showing a significant increase of successes in the high dosage column.

A. A. Kurland(5) studied the response of 400 cases of schizophrenics to chlorpromazine and reserpine and concluded that chlorpromazine is the superior drug. This, too, was amply confirmed.

Of vital interest for the development of the method called in this trial Intensive Chlorpromazine Therapy was the paper of M. W. Foster and R. S. Gayle, read at the 49th annual meeting of the Southern Medical Association Section for Neurology and Psychiatry in November, 1955, and the consequent discussion of this paper (6). Here it was reported and strongly supported by Ayd(6) that a combined therapy of chlorpromazine and electroshock therapy achieved quick and very good results and that the dangers thought to be great in this combination are, in fact, minimal and easily avoidable, especially if chlorpromazine is not given directly before treatment.

In searching for the optimum therapy in schizophrenia, it follows from the above references that chlorpromazine was preferable to reserpine, that a moderate to high dosage technique had advantages over the low dose and that it was desirable to combine ECT with medication. Thus it was found advisable to:

1. Try to find an optimal dosage of chlorpromazine. The differentiation of dosage for acute and chronic schizophrenics was considered irrelevant. Whatever damage the disease process does in a prolonged course, can have little or no bearing on the disease process per se, and the thorough suppression of the disease by forcing an early and lasting remission is of great importance. The combination of chlorpromazine and ECT was thought to be a powerful agent. In a number of single trials ranging from 800 to 3000 mgs. daily, 2100 mgs. daily was found to be optimal as a peak dosage.

2. Try to find an optimal time limit. Maintaining in single trials patients on the peak dosage, varying from one day to one month, it was found that too short a period was not giving lasting benefit, delaying in fact the remission, or being followed by rapid relapses, whereas continuation for too long a period did not alter the victure either in success or failure but made epileptic and pseudo-Parkinsonian side effects very prominent without helping in the process of forcing or maintaining a remission, nor in fact did it seemingly break up psychotic features in the very malignant forms of schizophrenia. Ultimately, a skeleton scheme of the intensive chlcrpromazine therapy was evolved (Table 1).

A quick permeation with chlcrpromazine parenterally is achieved and accompanied by 3 electroconvulsions, modified by Pentothal and Brevidil. The second step is a daily increase of chlorpromazine by 100 mgs. t.d.s. to the peak dose of 700 mgs. t.d.s., which is held for one week. The dosage is then decreased by 100 mgs. t.d.s. until a level of 300 mgs. t.d.s. is

i Formerly Senior Registrar, Hellingly Hospital, Hailsham, Sussex. Now at St. Martin's Hospital, Canterbury, Kent, Eng.

TABLE I

## BASIC OUTLINE OF INTENSIVE CHLORPROMAZINE THERAPY

							or orally t.d.s. or
	_						by 50 mgs. Intra-
	lst day	muscularly, t.d.s	. acco	ording	; to se	verity of	symptoms for 2 to
		4 days until oral					
1st ECT	2nd to 4th day	Chlorpromazine	mgs.	100	t.d.s.	(tabs.),	for 2 to 4 days.
2nd ECT	4th to 6th day	**	"	200	?	<b>,, »</b>	for 2 to 4 days.
3rd ECT	6th to 8th day	"	"	300	1	(Syrup)	for 2 to 4 days.
	9th day	**	17	400	*>	: . : <b>,,</b>	for 1 day.
	10th day	,,	17	500	Ý	"	for 1 day.
	11th day	,,	"	600	وُو	>>	for 1 day.
	12th to 19th day	"	**	700	לכ	"	for 7 days.
	20th day	"	*,	600	وأو أ	"	for 1 day.
	21st day	"	"	500	77 	.22 .	for 1 day.
	22nd day	"	**	400	*	**	for 1 day.
4th ECT	23rd day	"	"	300	*	,,	for 1 day or be-
	,				į		ginning of main-
							tenance level.
5th ECT	24th day	"	,,	200	,,	(tabs.).	usual mainte-
				<b>-</b> 00,	1	(,,	nance level for
							varying times,
							sometimes per-
	•				1		manent.
6th ECT	25th to 35th day	"	"	100	,	,,	maintenance dose
om ner	20 m to both day			100	ļ		in favourable
					į		
		<b>»</b>	,,	50	,	,,	cases.
				50	-		after discharge
	•				'		indefinitely.

reached and 3 further modified electroshocks are given.

This is not a rigid scheme and it is guided by the response of the patient and the severity of the side effects. These side effects rarely occur during the period of the build-up of the therapy but if they happen during the peak period the manipulation of the situation leads to an earlier beginning of the descending limb of the therapy.

#### METHOD

All female first admissions, diagnosed as schizophrenics, most of the female cases admitted and diagnosed as recurrent schizophrenics, a number of male first and recurrent admissions and chronic patients in the male ward and chronic cases from two female wards, under the care of the writer, were chosen. There was no selection, but in the long stay wards the age of the patients was restricted mainly to 20—50 years.

All first and recurrent female admissions were, in the vast majority, in the personal

care of the writer from January 1957 until September 1958 and the 143 patients, 93 females and 50 males, were divided into Groups A, B and C, first, recurrent and chronic hospitalized cases respectively (Table 2).

There were 37 first admissions against 106 recurrent and chronic hospitalised schizophrenics: thus a loading with acute illnesses which usually respond to treatment, is avoided (Table 2).

An assessment of the type of schizophrenia has been made, but it was found that only in rare cases was this classical enough to categorise in one diagnostic pattern (Table 3).

In the recurrent Group B and the chronic Group C, all previous treatments, as far as they are recorded in the old case notes, were noted and are summarised in Table 4.

Assessment of the condition of the majority of patients was made by the writer, the remainder by his colleagues. A first regular assessment was made after the patient was stabilized on his maintenance dose, usually

### TABLE 2

#### Number of Cases and Grouping

A.	Number of first acute schizophrenic episodes	Female 30	Mal€ 7	Total 37
В.	Number of acute schizophrenic breakdowns after previous remissions Number of chronic hospitalised schizophrenics	28	22 ,	50
	(over two years)	$\begin{array}{c} 35 \\ \hline 93 \\ \hline \end{array}$	$\frac{21}{50}$	$ \begin{array}{r} 56 \\ 1\overline{43} \\ \underline{} \end{array} $

TABLE 3

a = Catatonic Schizophrenia

### A ROUGH DIAGNOSTIC SUB-CLASSIFICATION

b =	Parano	id Sch	izophrenia		d = Simplex Schizophrenia						
				•	Group A	Group B	Group C	Total			
a					 4	2	7	13			
a + b					 3	13	17	、 33			
b					 15	26	12	53			
b + e ·					 5	4	5	14			
c					1	2,	2	5			
a + c					 5	1	3	9			
a + b + c					 2	2	7	11			
d					 2		3	5			
					$\overline{37}$	50	$\overline{56}$	143			
							=	===			

TABLE 4

### TREATMENTS PREVIOUS TO INTENSIVE CHLORPROMAZINE THERAPY

## Previous to Intensive Chlorpromazine Group B and C. Number of patients treated.

break-up of psychotic behaviour or any signs of a remission.

c = Hebephrènic Schizophrenia

ECT Straight, Modified or Cardiazol	86
Deep Insulin Coma Treatment	37
Modified Insulin Treatment	20
Small doses of Chlorpromazine or Serpasil	32
Prefrontal Leucotomies	10

#### TABLE 5

#### STANDARDS OF ASSESSMENT

	STANDARDS OF ASSESSMENT
I = Recovered	Full social and individual rehabilitation on the premorbid
II = Good Improvement	level of personality integration.  Full social integration but less than the premorbid level.
III = Mild Improvement	Full social rehabilitation but still showing elements of
IV = Minimal Improvement	former schizophrenic illness.  Arrest of overt psychotic behaviour, ability to be maintained
Iv = Minimai Improvement	in a sympathetic environment out of Hospital or upgrading
	inside the Hospital; works, dresses, feeds without supervision, psychiatric supervision necessary on Out or In-Patient casis.
$\dot{V} = No$ Improvement	Continuation of the schizophrenic disease process with no

after his sixth modified ECT. A firm assessment, of course, was made prior to discharge. Followup was carried out by the writer and his colleagues in all outpatient clinics of the area, and for the more recent admissions, regular followups in this hospital had been arranged by the writer after the discharge of the patients, at monthly intervals (Table 5).

Clinical details of the intensive therapy are of some importance. The patient is usually in bed for the first 2 to 4 days to acclimatize to ward conditions and he is encouraged to be up and about until his ninth day. From the ninth to the twentythird day he is in bed again because of drowsiness, orthostatic disturbances, epileptic manifestations and occasional confusional states. Severe pseudo-Parkinsonian symptoms such as drooling, speech difficulties, marked limb rigidity with "cogwheel" neuromuscular response to passive movement, myoclonic jerks, epileptic fits, gross malaise with feelings of severe weakness may often make one choose a shorter time or a lower dosage level of the 7 day peak period. Food and liquid intake, bowel and bladder action, are attended to and special care of the heart and lungs is given. A full blood count is taken if any mouth or throat pathology is observed. The activities of patients in bed, like reading, knitting, drawing, conversation with nurses are encouraged but drowsiness in most cases prevents these activities.

After the period of maintenance, not later than 10 days after the last ECT, an assessment is tried to fix the maintenance level which varies from 50 to 300 mgs. t.d.s. It usually depends on the degree of remission. It is, to judge from the experiences of the last 21 months, of primary importance not to be too quick to reduce chlorpromazine or to cut it off altogether by misjudging success, or failure, too early; especially in chronic schizophrenics the rigid maintenance of quite high levels of chlorpromazine, even up to 400 mgs. t.d.s. is part and parcel of the intensive chlorpromazine therapy.

The results of this trial are given in Table 6 and the administrative outcome is assessed in Table 7 together with the fate of 16 relapses.

Side effects are tabulated in Table 8.

#### Discussion

1. The combination of intensive chlorpromazine therapy and ECT has been thought dangerous by some authorities. Freeman(1) mentions a number of serious complications and deaths and states that this method should be used with great caution. Goldman(7) feels that chlorpromazine is no contra-indication to ECT, criticising the authors for not stating their methods of giving ECT, but he maintains that no muscle relaxants should be given. In our experience, there is no danger or contra-indication in either the combination or the giving of muscle relaxants. In this trial a minimum of 900 electroshocks have been given to patients before and after the peak period, usually at the level of 900 mgs. per day chlorpromazine, and in no case was there an difficulty in the recovery. The standard method used was as follows:

Pre-medication with atropine, half-anhour before treatment, no meals 3 hours before treatment, bladder and bowel emptied before treatment, 3–5 cc. of 5% solution of Thiopentone, 0.5–1 cc. Brevidil, the last two given through the same needle but in two syringes, oxygenation of the patient until full relaxant effect has been observed, shock, oxygenation at the tail-end of clonic phase of convulsion until full breathing established.

The only observation during these treatments was the marked prolongation of the clonic phase when ECT was given following the peak period. This is also seen after deep insulin coma treatment and is not considered relevant.

2. During the single trials to estimate optimal dosage, epileptic fits of classical grand mal character were observed regularly in dosages over 2100 mgs. per day. In 3 cases of failure after the peak period, using the above method, treatment was recommenced by raising the dosage to 3000 mgs. per day, and all 3 cases had fits. However, a further 17 epileptic fits occurred during the 2100 mgs. per day level. In these cases, 7½ grs. sodium amytal were given intramuscularly and the descending limb of the therapy began irrespective of the length of time of the peak period maintained. As in deep insulin coma treatment,

their occurrence should not lead to disruption of the therapy.

3. The confusional state reported in 15% of all patients occurs usually near or during the peak period. It is often quite out of tune with the underlying psychosis, in fact, it is a superimposed toxic psychosis. In most cases there is gross restlessness, over-activity, over-talkativeness, speech is found to be incoherent and the contents have little bearing on the pre-existant primary delusions; in some cases gross euphoria and episodes of manic character were observed. Here the danger consists in diagnosing a relapse and breaking up the therapy. It was found in all cases that sedation with sodium amytal, again given intramuscularly, with a dosage of 7½ grs. alleviated this state and was given concomitantly with the chlorpromazine therapy.

4. Jaundice and agranulocytosis were constantly watched for, but did not appear in

any of the 143 patients. Three cases, 2 females and 1 male, had mild jaundice previous to intensive chlorpromazine therapy when on small doses of the drug.

5. Two chronic deteriorated schizoparenics committed suicide after lengthy periods of maintenance dosage. Their suicides were not thought be related to the action of chlorpromazine, but they must, naturally, be regarded as therapeutic failures.

In view of the fact that side effects with chlorpromazine are encountered regularly, the method described above is not blind. It follows, therefore, that the observations made are subjective ones, but the following points emerge:

1. Intensive chlorpromazine therapy is a useful method of forcing a remission in primary schizophrenic episodes. It works at least as well as other methods of treatment in primary schizophrenia, with the exception of simple schizophrenia and the few

Discharges in this Hospital Transfer or

TABLE 6
RESULTS OF 143 PATIENTS AFTER INTENSIVE CHLORPROMAZINE THERAPY

		Acute First Schizophrenic Episode Fem. % Male %			B: Pre	Acute Schizophrenic Chronic Breakdown after Hospitalised Previous Remission Schizophrenics Fem. % Male % Fem. % Male %					ised enics	Тога				
_				Maie	10	P	?m.	% IVI	are .	10	re	$m, \gamma$	10 M	11 e %		%
1	(Recovered)	14	38	1	3	7	14	1 2	,	4		_		_	24	17
	(Good Improvement)	10	27	3	8	11	22	10	20	0	4	7	2	3.5	40	28
III	(Mild Improvement)	4	10	3	8	ę	18	3 8	1	8	15	26	6	10.5	46	32
IV	(Minimal Improvement)	1	3			]	. 2	2			12	21	,11	20	25	17
V	(No Improvement)	1	3		****						3	6	٠ 2	3.5	6)	6
VI	(Suicides)					-		. 3			1	2		2.5	2)	_
		30		7		28	}	22	)		35		21		$\overline{143}$	

TABLE 7
Administrative Outcome

		readmis	sion to	other Hospit	al
		Discha	rge	I	Remain
Out of 37 (Group A) First Admis	sions	35	(94%)	2	(6%)
Out of 50 (Group B) Recurrent	44	(88%)	6	(12%)	
Out of 56 (Group C) Chronic Ho	spitalised Patients	20	(35%)	34	(65%)
	Relapses	Re-Discharged	! ;	Still Remain (i	nc. in the
•			al	bove 'REMAIN	Celumn)
GROUP A	. 3	1		2	
GROUP B	, 8	5		3	
GROUP C	5	2	•	3	
	16	8		8	
	- Announce of the Park		1	=	

cases of extraordinary malignant catatonic schizophrenia who relentlessly deteriorate in spite of all known treatments; 4 out of the 6 patients, 2 males and 2 females, belong to the latter, the remaining 2 were diagnosed as schizophrenia simplex. Severe longstanding paranoid schizophrenics, even if admitted to hospital for the first time or after long intervals, have been found to need very prolonged treatment on high maintenance levels up to 400 mgs. t.d.s. for as long as 6 to 12 months.

2. Intensive chlorpromazine therapy seems to have the same positive effect with recurrent cases, Group B. The relapse rate in this group was higher than in the other groups, as one would expect for both medical and social reasons; 8 relapses out of 50 patients, respectively out of 44 discharges, were recorded, but a repeat course of intensive chlorpromazine therapy was given in all these cases with equally good

Agranulocytosis

results, that is, 5 have been re-discharged after the second course.

3. Less spectacular in numbers, but of perhaps the greatest importance, are the results in the treatment of chronic hospitalised schizophrenics. If a discharge rate of 35% could be reached on a national level it would certainly relieve the pressure on our mental hospitals considerably. One must understand clearly, however, that in the rehabilitation of chronic schizophrenics, and this is probably equally true for primary and recurrent patients, modern hospital conditions with maximal freedom, occupation, enlightened nursing, maintenance of the patients' social relations, play a preponderant part. This is obviously difficult to assess but may be of greater significance than even the best medication.

4. In one patient of Group A, intensive chlorpromazine therapy did not force a full remission and although maintained on

TABLE 8
Side Effects

Side Effects	Females	Males	Total !	Percentage	Special Medication Given
Drowsiness	85	41	126	88	<del>-</del> .
Pseudo-Parkinsonism	51	21	72	51	Reduction at maintenance level
		_			only
Skin reaction—Oedema,	28	3	31	21	Cortisone Cream when severe.
Sweating, Flushing	16	4	20	14	Nivaquine 200 mgs. b.d.
Epileptic Fits, myoclonic jerks	10	4	20	14	7½ grs. Sodium Amytal Intramus- cularly.
Menstrual disturbances in	34		34	36%	In one case, a false positive Freed-
relevant age				ill females	man test was seen:
<u> </u>	•				
Hirsuties	1		1	_	
Pseudo-lactation	2	-	2	_	
					) }
Confusional State	13	9	22	15	7½ grs. Sodium Amytal Intramus-
Demonia	7	5	10	8	cularly.
Pyrexia	1	Э	12	0	As usually concomitant with hypostatic pneumonia—Penicillin giv-
					en in usual dosage—Chlorproma-
					zine reduced pro tem.
Epistaxis		1	1	_	Reduction of dosage temporarily.
Obesity	41	8	49	34	
Skin reaction—sun irritation	37	15	52	36	Nivaquine 200 mgs. b.d. Anthi-
	•			:	san Cream—Sun hats when up and
				-	about.
Jaundice	· · ·	、			<del>-</del>

chlorpromazine 300 mgs. per day, it was felt that the patient was relapsing. At that point, deep insulin coma therapy was given and a good remission was forced with 38 comas. She has been maintained since then, for over a year now, on chlorpromazine mgs. 150 per day and has not relapsed and was assessed when last seen as an outpatient, as maintaining her good improvement. From a comparison of recurrent and chronic patients who had leucotomies, and those who had deep insulin coma treatment, it became clear that all cases leucotomised responded indifferently to intensive chlorpromazine therapy, whereas a response to ICT after deep insulin coma therapy was significantly better. It is thus felt that deep insulin coma therapy can be adjunctive in achieving a remission.

5. It is well understood that discharge from hospital is not necessarily a good criterion of clinical change, e.g. some voluntary patients left hospital prematurely and against advice, whilst other long-stay patients could have been discharged if social circumstances had allowed them.

6. All in all, the response to this method of treatment surpasses the expected rate of natural remissions and it proved successful in patients who were unsuccessfully treated by other methods.

This is most forcibly expressed in considering the response to intensive chlor-promazine therapy of the long-stay chronic illness Group C. Of these 56 patients, 44 had had ECT, straight, modified or Cardiazol, 28 low dosage chlorpromazine or Serpasil, whilst 21 had received deep insulin coma treatment, 13 modified insulin treatment and 8 had prefrontal leucotomy. None had been considered well enough to be discharged. Following intensive chlorpromazine therapy, however, 20 were discharged (6 classified as Grade II, 14 as Grade III).

7. All 16 relapses were associated with failure of the patient to continue on chlor-promazine in the maintenance dose. It cannot be overstressed, that a schizophrenic in remission is not cured; rigid psychiatric supervision and upkeep of an optimal maintenance dose of chlorpromazine are part and parcel of ICT. It is felt that much more knowledge of the disease is needed

before we can allow a patient to go without a medication which we know helped him to force and maintain a remission.

#### SUMMARY

A method is given here where increasing doses of chlorpromazine are given to all groups of schizophrenics, reaching a peak level of 2100 mgs. per day for one week. This dosage is decreased and after assessment a maintenance level of chlorpromazine is rigidly upheld for indefinite periods. Three modified ECTs accompany the ascending limb and 3 or more modified ECTs the descending limb of chlorpromazine therapy. Side effects are multiple but none is considered dangerous or necessitating the discontinuation of the treatment, especially if all necessary precautions are taken and the patient is closely watched.

The results of this method are sufficiently encouraging to justify its continued use.

The method is not considered rigid and the level of dosage and the length of time in which higher dosage levels are given are guided, naturally, by the patient's response and the severity of the side effects. The importance of the method is felt to lie in the quick way a first remission is forced, recurring episodes and relapses reversed and chronic schizophrenic illness alleviated.

#### ACKNOWLEDGEMENTS

I wish to thank Dr. David Rice, Medical Superintendent, Hellingly Hospital, for his encouragement, Dr. Ronald Maggs for his continuous advice and help, Sister Doris Whitelock and Charge Nurse James Coyle for their daily co-operation in the working out of all aspects of medication and the safe-guarding of patients against side effects. My special gratitude goes to Male Nurse Michael Clark (M.A.), in the tabulation of the records.

#### BIBLIOGRAPHY

- 1. Freeman, A.: N. Eng. Med., 235: 877, 1956.
- 2. Kinross-Wright, V.: Am. J. Psychiat., 3: 90, June 1955.
- 3. Goldman, D.: J.A.M.A., 157: 1274, 1955.
- 4. Kurland, A. A.: J. Nerv. and Mer.t. Dis., 121: 321, April 1955.

- 5. Kurland, A. A.: Am. Med. Assoc. Archives of Neurol. and Psychiat., 75: 510, May 1956.
- 6. Foster, N. W., Gayle, R. F., and Ayd, G.: Annual Meeting of the Southern Medical As-
- sociation Section of Neurology and Psychiatry, November 1955, as reported in the Southern Medical Journal, 49: 731, July 1956.
  7. Goldman, D.: Am. J. of Med. Sciences,
- 232: 137, Feb. 1957.

# RECOVERY FROM SEXUAL DEVIATIONS THROUGH OVERCOMING NON-SEXUAL NEUROTIC RESPONSES <sup>1</sup>

## IAN STEVENSON, M.D.2 AND JOSEPH WOLPE, M.D.3

The treatment of sexual deviations is commonly said to be difficult and the results uncertain(1, 2). Several popular generalizations about psychotherapy may contribute to these unfavorable aspects of the treatment of these disorders. On the grounds that it takes only one white crow to prove that all crows are not black, we present 3 cases of sexual deviation in each of which a significant transformation of sexual behavior occurred with comparatively little treatment, at least as judged by the number of interviews, respectively 45, 10, and 21. From our data we shall infer that the following popular generalizations are untenable as generalizations: (a) that a requirement of recovery from a psychoneurosis (of which sexual deviations are considered one type) is the recall of repressed memories of early traumatic experiences; (b) that such recovery can only occur, or be lasting if it should occur, as a result of the uncovering and modification of specific sexual conflicts; (c) that the removal of symptoms or the alteration of outward behavior without modification of such conflicts must inevitably lead to the outbreak of other symptoms, if not the recurrence of the old.

#### CASE REPORTS

Case 1.—A. K. was arrested by the police on the complaint of his neighbors that he had been manipulating the genitals of little girls. One of these neighbors had tolerantly agreed and arranged that the charges would be dropped on condition that A. K. seek psychiatric treatment. He agreed to this with some misgivings.

He had been playing with the genitals of little girls regularly for 3 years, sporadically for many years. Married 10 years, he was the father of 2 girls with whom, incidentally, he did not play sexually. His sexual relations with his wife had once been satisfactory, but had fallen off in later years. He had gradually become almost completely impotent with his wife.

Although 42 years old, A. K. continued in a most servile relationship towards his father who gave him advice and financial donations, but also scorn and derision. Towards his customers he was equally unassertive. He said of himself "I want people to like me. I can never say 'No.'" Originally he had a good relationship with his wife, but as he failed to advance in work or money, they drifted apart and she gradually became irritable and even shrewish towards him. He had gradually withdrawn from her.

Of A. K.'s early sexual history almost no information emerged. In an early interview he mentioned that when he was 5, some boys and men had given him marbles for performing fellatio on them. Other details of early sexual experiences were not pursued; first, because the patient himself had much pressure to talk about his present situation, and secondly, because theoretical considerations presented elsewhere (3, 4, 5) made it seem unlikely that they would be necessary for the patient's recovery. This inference proved correct.

A. K.'s father had at first agreed to pay for his therapy, but after the alarm of A. K.'s arrest abated he treacherously withdrew his support. A. K. wanted to leave therapy, but was detained by the fear that the district attorney would bring him to trial. So he paid for his therapy himself, 45 interviews over a year and a half.

The defection of his father when A. K. most needed him brought fully into the open his child-like attitude which had persisted toward his father. He began to remedy this state of affairs, first, by freely expressing his resentment towards his father for the latter's mistreatment of him over the years, and secondly, by completely emancipating himself from dependence on his father for money, advice or anything else. The assumption of responsibility for paying for his own treatments signalized this change, but was actually only the first of such moves.

The subsequent therapeutic interviews were largely occupied in examining and improving

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Department of Neurology and Psychiatry, School of Medicine, University of Virginia, Charlottesville, Va

<sup>&</sup>lt;sup>3</sup> Department of Psychiatry, University of Witwatersrand, Johannesburg, South Africa.

A. K.'s current relationships with other people. A. K. gradually became more assertive in such relationships. His relationships with others, including his father, improved markedly. He changed and improved his job and greatly expanded his social activities. His relationship with his wife, especially improved and he found a complete return of his potency with her. At the same time, the desire to play with little girls receded and did not return. Further descriptions of the technique of psychotherapy have been published elsewhere (3, 4, 5).

Three follow-up inquiries were made 1, 5 and 6½ years after the completion of treatment. On each occasion he reported himself as having maintained his improvement, with no recurrence of his deviant sexual behavior.

Case 2.—S. E. was a 22-year-old student who referred himself for the treatment of homosexuality. He was also anxious, depressed and performing poorly in his college work. He had begun homosexual experiences at the age of 14 and continued them for the next 8 years. He also masturbated frequently. His relationships with girls had been meager and unsatisfactory, both emotionally and sexually. He had had sexual intercourse only 3 times with girls during the 8 years of his homosexual activity. At the time of coming for treatment, he had been seeing a good deal of a girl to whom he felt considerable attraction and was even vaguely contemplating marriage to her. He was held back first by the thought that he was using marriage as a possible cure for his homosexuality, and secondly, by the conclusion he had reached that he was irreversibly homosexual and unfit for marriage. Therapy seemed a last possibility before resigning himself to this fate.

No information was elicited about S. E.'s early sexual experiences. His father had died when he was 12 and his mother had remarried 2 years later. The patient's stepfather proved a tyrant who tried to control the family, including the patient, by restrictions on money. He somehow gained control over a small undistributed legacy the patient's father had left him. Instead of having a regular allowance, the patient had to go to his stepfather each time he needed money.

Only 10 interviews took place. The discussion of S. E.'s homosexuality (after the history-taking) was confined to the therapist's offering two remarks with regard to it. First, he said that he thought S. E. had perhaps been premature in assigning himself to the group of permanent homosexuals. Then he suggested

that as the patient's father had died when he was young and as his stepfather was such an unsympathetic person, perhaps S. E.'s homosexual activity was chiefly driven by a wish for friendly companionship with other men. These comments reduced the anxiety and shame he felt about his homosexual activities.

The therapist tried to instigate more assertive behavior on the part of S. E. towards his parents, especially his stepfather; this the patient soon developed. Against his stepfather's advice he persisted in purchasing a second-hand car he wanted. This was a turning point and other similar triumphs followed. S. E. soon became more ardent in the courtship of his girl friend. After only 10 interviews and just as the therapy seemed to be getting properly under way, S. E. announced that he now felt entirely well and capable of handling his affairs; that he planned to get married shortly, and saw no reason for further treatment. At this point, the therapist had understandable reservations about the future course of events in this patient's life.

Follow-up interviews took place at intervals of 8 months, a year and not quite 3 years after the termination of therapy. S. E. had married and was getting along very well with his wife. His sexual relations with her had been entirely satisfactory from his point of view, although not at first for her. About a year after the marriage his wife had given birth to a baby. The patient had continued to emancipate himself from his parents. He had forced his stepfather to process his father's estate and also to put advances of money given to him on a sound basis as money borrowed against his legacy and not "hand-outs" at the pleasure of his stepfather. His work at college and his interest in it had improved markedly.

For the first 2 years of his marriage he had heterosexual relationships with his wife exclusively. Early in the third year of the marriage his wife became ill for several months and during the abstinence this occasioned, he had 4 homosexual experiences. When his wife recovered they resumed intercourse which improved further and became enjoyable to her as well as to him. The patient reported far greater pleasure in his sexual relationships with his wife than he had experienced in his homosexual relationships.

Case 3.—E. R., a 32-year-old Swedish hair-dresser, was first seen in April, 1954. Seven years previously he had become aware of a slowly progressive diminution in his general enjoyment of life. He emigrated to South Africa early in 1952 and soon after began to suffer

a persistent feeling of tension combined with a varying amount of depression. Over the next 2 years he was treated unsuccessfully by several psychiatrists who gave him ECT, injections of vitamins and some psychotherapy.

The patient was born in a small town in Sweden. His father was amiable, but passive. His mother was an ambitious and querulous woman who complained of her son's stupidity, often screaming at him and beating him. She treated him like a girl, even forbidding him to play football. He grew afraid of her.

At the time of puberty, E. R. found himself attracted to men, although at first more socially than sexually. As he became older, he experienced no sexual attraction for women and when they occasionally made advances towards him became extremely anxious and experienced no sexual arousal. In contrast, he found pleasure in a succession of attachments to men with whom he had sexual relations. But he thought homosexuality sinful and shameful. Failure to master his homosexual impulses led to mounting anxiety from which (and from familial stresses) he sought relief by emigrating when he was 30.

The patient's reactions in many common social situations were extremely fearful and submissive. If a customer made an unjust criticism of him he would let her get away with it and merely feel helpless and tearful.

The 5 anamnestic interviews did not discover any causal sexual trauma, did not elicit any emotions of marked intensity, and were not accompanied by any change in the patient's condition.

The interviews of the next 2 months were devoted to encouraging assertive behavior for overcoming his social fears. He soon became much more positive in all his behavior. By the end of June his symptoms had almost completely disappeared and he was nearly always at ease with his customers. In the meantime, he had formed a couple of homosexual attachments, each of which, although satisfying while it lasted, had petered out in less than a month. Late in November, 1954 he reported complete freedom from symptoms.

He was not seen again until June, 1955, and then told the following story. He had given up worrying about the sexual problem and had been doing just what he pleased. In November, 1954, he had formed a pleasant homosexual association, but soon found himself unable to respond sexually. He broke off the relationship for a time, but when he resumed still could not respond sexually. He tried sexual relationships with several other men with repeated failure. He became antagonistic

towards men and said, "If a men were to touch me, I would hit him."

About the middle of 1954 he had met a girl called Jean to whom he became attracted. He began to take her out and found her company pleasant. One night, after a party when they were both slightly drunk, he kissed her and found this pleasant. He then began to respond more and more to her sexually, and thought that he could have had coitus with her. Unfortunately, his inexperience led him to mishandle Jean and when he was seen in July, 1955 he reported that she had rejected him. He was consequently soon leaving for England on his own. There had been 21 interviews of therapy.

In January, 1956 he wrote a letter from London. He said that after he had had dinner at a woman's apartment, she suggested that he spend the night with her. Although strongly attracted, he felt very much afraid and excusing himself, got up to go home But when he opened the front door it was raining heavily. He decided to go to bed with her and risk the chagrin of failure. To his delight, however, his sexual performance was completely successful. At the time of writing he had made love to this woman almost every night for a month, always with complete success, and with greater enjoyment than he had ever experienced with men. He wa: jubilant. He regarded this as his final vindication, feeling that he need now never again feel inferior to other men. Exclusively hetercsexual behavior continued. In March, 1959 he wrote that he had married in January and his sex life had continued in every way satisfactory.

#### DISCUSSION

We think the data adequately show that these patients had established patterns of sexually deviant behavior which were succeeded by normal patterns of heterosexual behavior which were not mere transient changes since they remained established for the periods of our follow-up inquiries. How these changes came about requires an explanation.

# THE ROLE OF LEARNING IN DETEFMINING ADULT SEXUAL BEHAVIOR

The patterns of adult sexual behavior are learned expressions of the sexual drive. Experiences with persons resembling those who are later to become the objects of sexual impulses may importantly influence their expressions. In a boy, experiences

which are pleasurable with women (beginning with the mother) will tend to promote women as sexual stimuli. Social training and the assignment of social roles based on anatomical sexual differences contribute greatly to deciding the stimuli to which sexual responses will occur. But such social training is also a conditioning process, although a highly complex one, and not fundamentally different from the conditioning which occurs in the more individual experiences of the growing child within his family. Formative experiences capable of influencing the selection of stimuli to sexual pleasure may, and usually do, occur chiefly in childhood. However, they may occur later and we have insufficient grounds for thinking that childhood experiences are the only relevant ones or even always relevant in this connection (6).

In some circumstances, the sexual response towards a particular person or kind of person may be diminished while some sexual desire remains and is stimulated by other persons. If a boy or man finds women frightening to him, the anxiety they arcuse may inhibit whatever sexual response they would simultaneously stimulate. Other persons such as small children (Case No. 1) or other men (Cases No. 2 and 3) may still stimulate sexual responses. Such stimulation by persons of the same sex may become further augmented by the play of other motives, e.g. a wish for companionship or for power. Ovesey has described the operation of these motives in promoting homosexual behavior as "pseudo-homosexuality" (7, 8). Our case No. 2, and several of Hadfield's cases (9), apparently sought men because these offered companionship and affection which they could not easily obtain elsewhere. However, such non-sexual attractions, like the sexual ones which accompany them, are influenced by the conditioning experiences which make men stimuli of pleasure when women stimulate anxiety.

# THE PROCESSES OF CHANGE IN THE SEXUAL BEHAVIOR OF OUR CASES

Most people discover for themselves that if you stand up to a bully he becomes a pygmy, whereas if you run from him he becomes a giant. This principle deserves

better understanding and acceptance in psychopathology. An explanation of its effectiveness in terms of learning theory has been proposed elsewhere by one of us(4). Moreover, though generalization, an assertive response towards one person may reduce the capacity of other persons to stimulate anxiety. In the 3 cases reported here, the patients had anxiety stimulated by women, and this was accompanied by diminished sexual responses to them. When the patients developed assertive responses toward other people, their susceptibility to the arousal of anxiety became lowered so that the sexual stimulation of women was no longer outweighed by their stimulation of anxiety. Thus, the basic preference for women established early in life by social roles and other learning could now assert itself. The further experiencing of full sexual pleasure with women then reinforced the capacity of the women to stimulate sexual pleasure and the changed pattern of sexual expression was thus consolidated.

## SEXUAL DEVIATIONS THAT ARE DUE TO ANXI-ETY ORIGINATING IN SEXUAL EXPERIENCES

We do not mean to imply that sexual experiences are never specific in the origin or removal of sexual inhibitions and deviations. The connections between anxiety and sexuality are specific in some cases, general in others, and perhaps of both kinds in still others. For example, if a mother arouses anxiety in a child during his sexual excitement (perhaps also stimulated by a women, as in one of Hadfield's cases) sexual responses may be markedly inhibited while other responses remain uninfluenced.

Supposing that specific connections have been established between sexual responses and the arousal of anxiety, what can be done to alter these? Herzberg(10) assigned to homosexual patients series of graduated tasks designed simultaneously to reduce the anxiety aroused by women and increase the pleasure they evoked. Salter (11) has reported success in the treatment of homosexuality by the instigation of assertive behavior according to a theory and practice somewhat similar to our own. In the treatment of impotence with specific

connections between sexual responses and anxiety, one of us (J. W.)(4) has found successful the use of graded sexual responses controlled by the patient so that anxiety is not aroused by failure. As we mentioned earlier, Hadfield found beneficial effects in the recall of events which had apparently originally established the connections between sexual responses and anxiety. This brings us to the mechanism of action of such recall.

# A CRITICISM OF CURRENT VIEWS ON THE THERAPEUTIC EFFECTS OF RECALLING PAST EXPERIENCES

The recovery of repressed memories and the uncovering and interpretation of specific sexual conflicts contributed nothing to the recoveries of our patients because these did not occur in the therapy or, so far as we know, outside it. This point deserves emphasis because Hadfield, on the basis of his observations in the treatment of homosexuality, has recently stated that his patients "were cured when, and only when, their propensities were traced back to infantile experiences" (9). Evidently, the recall of past painful events may contribute to recovery. A long line of cases extending from the early ones of Breuer and Freud(12) to those recently cited by Hadfield attest to this.

Hadfield attributes the benefits of this recall to the "release of repressed emotion" and in this is, of course, a modern spokesman for the traditional psychoanalytic theory of abreactions. However, it is doubtful (although not impossible) that emotions continue after what is called repression in a state of activity pressing towards expression. The popular analogies of such emotions to steam in a bottle are more picturesque than explanatory. We do not question the fact that anxiety can contribute to amnesias, only that the anxiety (or other "repressed emotion") is constantly welling up towards the surface of behavior. Davis(13) has pointed out that memory images are perceptions just as are those caused by current people or objects, and we respond to the stimuli in memories just as we do to those in other perceptions. The recall of a scene once painful can then evoke anxiety not as an old de-repressed emotion, but in response to the stimulus for anxiety occurring in the immediate perception. Thus memory of the cruel mother may stimulate present anxiety rather than release old anxiety. This distinction is worth making because it hears on the process by which stimuli lose their capacity to evoke anxiety, so-called desensitization. This occurs if and probably only if the stimuli for anxiety are evoked in association with other stimuli which evoke non-anxious responses (3, 4).

Desensitization can occur by thinking alone under certain circumstances. Thus as a person ruminates some unpleasant event, he may bring into association with the memory images of the event, other thoughts which arouse other emotions that neutralize anxiety and so neutralize or antagonize the tendency of the event to stimulate anxiety. The process of desensitization through reassociation of a painful event proceeds better if the patient verbalizes the event and its associations to another person, usually a therapist. Desensitization to anxiety-producing stimuli may also occur in other ways than through the recall of past experiences. For example, it may be obtained by the systematic presentation of graded present-day anxiety evoking stimuli to the deeply relaxed patient(4).

Once freed from the concept of "repressed emotion" we become able to accept the fact that a psychogenic symptom can be modified or abolished without another appearing in its place(14). From the fact that anxiety is experienced when past traumatic events are recalled, Freud assumed that repression was a defense against anxiety and that symptoms were partial expressions of the repressed emctions and at the same time also defenses against the original emotions. These views became generalized without correction in the conventional literature of psychoanalysis so that nearly every psychogenic symptom came to be considered a defense against anxiety. It followed from this that any attempt to modify symptoms directly was at best a superficial tinkering and at worst, fraught with the danger of detonating a more serious illness. Yet the literature of psychiatry contains numerous instances of

the treatment and most beneficial removal of symptoms with conditioning techniques without the occurrence of other symptoms or any other adverse effects (4, 15, 16, 17, 18). Moreover, we have abundant evidence that many patients recover from psychoneuroses without psychotherapy (19, 20) and presumably without de-repression. Some neurotic responses clearly have defensive value for the patient, e.g., social withdrawal to avoid persons who stimulate anxiety, and such responses cannot be stopped without arousing anxiety. But other symptoms are results or concomitants of anxiety. Most psychoneurotic symptoms are simply learned unadaptive responses and their unlearning usually includes a reduction in anxiety in that stimuli which formerly evoked anxiety no longer do so.

#### SUMMARY

- 1. Three cases of sexual deviation are reported in which a return to normal heterosexual behavior followed the development of assertive behavior on the part of the patients. Follow-up inquiries 3 to 6 years later showed that the patients had maintained their improvements.
- 2. In these patients the sexual deviations were determined by anxiety that did not have a sexual origin. The processes of their therapy are discussed, and also, more briefly, the therapy of those cases in which anxiety is specifically attached to sexual stimuli.
- 3. The recoveries in these patients were not related to recall of repressed memories of traumatic events or the working out of specific sexual conflicts. The alteration of sexual behavior did not lead to the occurrence of other symptoms or other undesirable side effects.
- 4. The processes whereby stimuli of anxiety lose their capacity to arouse anxi-

ety are discussed and it is suggested that the concept of "repressed emotion" has hindered an understanding of the processes of recovery from psychoneuroses with and without psychotherapy.

#### BIBLIOGRAPHY

- 1. Fenichel, O.: The Psychoanalytic Theory of the Neuroses. New York: W. W. Norton, 1945.
- 2. Rubinstein, L. H.: Brit. J. Med. Psychol., 31: 14, 1958.
- 3. Wolpe, J.: A.M.A. Arch. Neurol. & Psychiat., 72:; 205, 1954.
- 4. Wolpe, J.: Psychotherapy by Reciprocal Inhibition. Stanford: Stanford University Press, 1958.
- 5. Stevenson, I.: A.M.A. Arch. Gen. Psychiat., 1: 99, 1959.
- 6. Stevenson, I.: Am. J. Psychiat., 114: 152, 1957.
  - 7. Ovesey, L.: Psychiatry, 17: 243, 1954.
  - 8. Ovesey, L.: Psychiatry, 18: 17, 1955.
- 9. Hadfield, J. A.: Brit. Med. J., June 7, 1958.
- 10. Herzberg, A.: Active Psychotherapy. New York: Grune & Stratton, 1947.
- 11. Salter, A.: Conditioned Reflex Therapy. New York: Creative Age Press, 1949.
- 12. Breuer, J., and Freud, S.: Studies in Hysteria. New York: Nervous & Mental Disease Monographs, No. 61, 1951.
- 13. Davis, R. D.: Brit. J. Med. Psychol., 31: 74, 1958.
  - 14. Yates, A.: Psychol Rev., 65: 371, 1958.
- 15. Rachman, S.: J. Abn. & Social Psychol., 58: 259, 1959.
- 16. Raymond, M. J.: Brit. Med. J., October 13, 1956.
- 17. Jones, H. G.: J. Abn. & Social Psychol., 52: 414, 1956.
- 18. Behrie, F. C., Elkin, M. T., and Laybourne, P. C.: Pediatrics, 17: 849, 1956.
- 19. Hastings, D. W.: Am. J. Psychiat., 114: 1057, 1958.
- 20. Saslow, G., and Peters, A. D.: Psychiat. Quart., 30: 283, 1956.

#### CLINICAL NOTES

## STUDIES ON THE NEUROCHEMISTRY OF SCHIZOPHRENIC AND AFFECTIVE DISORDERS

#### SAMUEL BOGOCH, M.D., Ph.D.<sup>1</sup>

The earlier demonstration in this laboratory (1c, 1d, 4) of an abnormality in the concentration of "total neuraminic acid" in cerebrospinal fluid (CSF) in schizophrenic patients led to the development of quantitative fractionation procedures (1b, 1e) for the separation and measurement of the macromolecular hexoses and hexosamines of CSF as well as of neuraminic acid (Fraction G).

Table 1 shows the range and means of concentration of these substances in 236 individual CSF samples. Both the absolute quantities and the molar ratios of these constituents have been shown to vary markedly from individual to individual (1b). The relevance of these findings on central nervous system constituents to functional states of the nervous system as well as to possible chemical bases of individuality is now being studied.

Table 1 shows that the absolute concentration of macromolecular (bound) neuraminic acid in schizophrenic patients as a group is lower when compared to nonschizophrenic mental hospital patients, and to general hospital adult controls. Values are also lower for bound hexosamine in untreated schizophrenic patients. On the other hand, the concentration of bound hexose is approximately the same in schizophrenic patients as in controls and in patients with depressive disorders. Higher than usual values have been observed in both the bound hexose and hexosamine of patients with manic psychoses, and in bound hexosamine alone in chronic brain syndromes.

Repeated double-blind determinations over a period of months on individual patients of these substances show that there is a definite tendency to constancy in both

their absolute quantities and in their molar ratios, but that with gross changes in function there are concomitant changes in these carbohydrate constituents in macromolecular binding. Thus, in the change from depression to the normal affective state and to elation, whether it occurs spontaneously, with an antidepressant drug, or with electroshock therapy, an increase has been observed in the absolute amount of macromolecular hexose and hexosamine ranging from 46% to 510%. Similarly, in the reverse change, from the hypomanic to the depressed state, the opposite change in micromolecular hexose and hexosamine has been observed, that is, a decrease in the absolute concentrations of these substances. With treatment, schizophrenic patients have shown up to 400% increase in the concentration of bound hexosamine, but very much less change (usually an increase) in the concentration of bound hexose and neuraminic acid. (Table 1.)

Recent evidence from this laborator relative to the concept of the "Barrier-Antibody System" (1c, 1d) function of neuraminic acid in the nervous system includes: 1. The demonstration of a serum precipitin to the neuraminic acid-containing brain ganglioside (1a), which has been utilized to localize brain ganglioside in the nerve cell body by the fluorescent antibody technique (1g); 2. The activity of brain ganglioside as membrane receptor (for viruses) (1f, 3); and 3. The effect of this substance on membrane-active systems (clam heart) (2).

The possible biosynthetic relationship of hexosamine to the more complex structurally related derivative neuraminic acid, considered in relation to the evidence on their 'maturation' in CSF(1b, 1c) and to the above findings on their macromolecular concentration in different psychiatric disorders leads to the formulation of the working hypothesis that there is an enzymatic

<sup>&</sup>lt;sup>1</sup> Director, The Neurochemical Research Laboratory, Department of Psychiatry, Harvard Medical School and the Massachusetts Mental Health Center (Boston Psychopathic Hospital), Boston, Mass.

TABLE 1

## Concentrations of Macromolecular (Bound) Hexose, Hexosamine and Neuraminic Acid in CSF of Psychiatric and General Hospital Patients

Diagnosis	Fraction G					
	Hexose, µg/cc. CSF. (as glucose)		Hexosaminė, µg/cc. CSF (as galactosamine)		Neuraminic Acid µg/cc. CSF	
	Mean	Range	Mean	Range	Mean	Range
1. Schizophrenia, untreated	19.0	(4.0-50.5)	8.3 <sup>-</sup>	(1.8-24.2)	5.1	(2.3 - 8.6)
2. Schizophrenia, treated	22.0	(7.0-54.5)	16.0	(3.2-44.6)	6.2	(2.7-10.1)
3. Other (than 4, 5 and 6)				1		
Mental Hospital	26.8	(5.5-81.2)	8.5	(1.6-15.0)	7.8	(3.3-17.2)
4. Chronic Brain Syndromes	20.5	(11.0-31.0)	23.1	(5.1-60.0)	·8.3 ·	(4.4-11.9)
5. Manic Psychoses	72.2	(51.6-88.0)	32.5	(9.0-57.0)	-	,
6. Depressive Psychoses	19.6	(14.5-31.0)	13.6	(6.2-18.8)	11.0	(5.5-15.1)
7. General Hospital	22.5	( 7.0-55.0)	13.5	(8.3-17.8)	10.6	(9.0-13.4)

disturbance in the synthesis or maintenance of both macromolecular hexosamine and neuraminic acid in schizophrenia, and that the first may be reversed (indeed 'overcompensated for') with therapeutic means at present available, but that the second is at present refractory.

#### **BIBLIOGRAPHY**

1. Bogoch, S.: (a) Biochem. J., 68: 319, 1958; (b) J. Biol. Chem., in press; (c) Am.

- J. Psychiat., 114: 172, 1957; (d) A.M.A.
  Arch. Neurol. Psychiat., 80: 221, 1958; (e)
  Am. J. Psychiat., 114: 1028, 1958; (f) Virology, 4: 458, 1957; (g) Nature, in press.
- 2. Bogoch, S., and Bogoch, E. S.: Nature, 183: 53, 1959.
- 3. Bogoch, S., Lynch, P., and Levine, A. S. : Virology, 7: 159, 1959.
- 4. Bogoch, S., Dussik, K. T., and Lever, P. G.: A.M.A. Arch. Gen. Psychiat., 1: 111, 1959.

#### RESERPINE AS A THERAPEUTIC AGENT IN SCHIZOPHRENIA

#### MANFRED BRAUN, M.D.1, 2

Despite much progress in the treatment of mental patients in recent years there still remain many patients who are unresponsive to various treatments.

Remembering Barnes and Kline's (1) earlier work on the subject and Braun's experience (2), we have used reserpine over a 2-year period at the Bronx VA Hospital for just such treatment resistant patients. Twenty eight male patients, aged 22 to 54, were selected for the study. All were schizophrenics with pronounced symptoms

of mania, excitement, negativism or periodic stupors. All were new admissions to the hospital but with a long history of mental illness. The patients served as their own controls. All had been previously treated with various phenothiazine drugs and 9 also had received ECT, insulin coma therapy or both combined. None of the patients had responded to therapy.

The patients were given 3 mg. of reserpine orally once daily and 5 mg. of reserpine intramuscularly once daily for 10 days, then slowly increasing up to 10 mg. daily intramuscularly for 20 more days if their response to the drug was not too favorable.

If the response was favorable, the 5 mg. intramuscular dose was maintained for 20 to 30 days, then gradually decreased to a

<sup>&</sup>lt;sup>1</sup> The following residents in Psychiatry at the Bronx VAH participated in this study: Bertram Barall, M.D.; Herbert Bengelsdorf, M.D.; Adolph Goldman, M.D.; and Harvey Ross, M.D.

<sup>&</sup>lt;sup>2</sup> From the Fsychiatry and Neurology service, VA Hospital, Bronx 68, N. Y.

maintenance level of ½ to 2 mg. orally once a day.

The usual precautionary measures were taken: temperature, pulse rate and blood pressure were done twice daily during the first week, and WBC was done biweekly. All patients received supportive psychotherapy and occupational therapy whenever their conditions permitted.

Sixteen patients (57%) improved very much so that they could be either discharged or sent to an open ward. Five patients (18%) became much more manageable but could not be discharged. Seven patients (25%) remained unimproved or became worse and had to be transferred to a chronic hospital.

All patients were evaluated clinically by

psychiatrists and nurses.

There were the usual side effects in the majority of patients: nasal stuffiness; dryness of mouth; increase of appetite; somnolence; and about 25% of the patients developed marked Parkinsonian tremors with rigidity, characteristic gait and salivation. The medication was not given to amy patient with a history of peptic ulcer or bronchial asthma, the usual contraindi-

cations for reserpine therapy. Side effects were easily controlled with the usual medications e.g. trihexyphenidyl (Artane) or benztropine methanesulfonate (Cogentin). In no case was it necessary to discontinue treatment permanently with reserpine because of side effects.

#### SUMMARY

The rapid and dramatic response of schizophrenic patients to treatment with the phenothiazines has resulted in a tendency to discard reserpine as a chemotherapeutic agent in this illness. Our experience suggests that there is a place in the therapeutic armamentarium against schizophrenia for reserpine, particularly in those cases displaying catatonic excitement or stupor with agitation and in those with manic features, especially when these patients fail to respond to the phenothiazines, ECT or insulin coma therapy.

#### BIBLIOGRAPHY

- 1. Barnes, Joseph H., and Kline, Nathan S.: Am. J. Psychiat., 112: 688, March 1956.
- 2. Braun, Manfred, and Philipsborn, A.: Am. J. Psychiat., 113: 80, July 1956.

#### TRIALS WITH SEVERAL NEW DRUGS

#### MICHAEL J. KEITH, M.D.<sup>1</sup>

This is a brief note upon the use of the "newer" anti-depressant drugs in a private psychiatric practice over the past six months. The drugs used have been the MAO inhibitors and imprimane. The doses used varied from 3 to 24 mgs. a day of Catron, 50 to 300 mgs. a day of Niamid, 15 to 75 mgs. a day of Nardil and 50 to 300 mgs. a day of Tofranil.

These drugs were tried as an initial treatment measure in approximately 50 patients. They were in the usual clinical groups of depressions ranging from psychoneurotic depression, manic-depressive reactions in depressed phases, schizophrenic reactions with depression, and involutional psychotic reactions of an agitated depressive type.

The results have been in the main ex-

----

<sup>1</sup> 745 Graydon Ave., Norfolk, Va.

tremely disappointing. There appeared to be little significant action beyond placebo effect, the majority of the patients have experienced no relief of their depressive symptoms though gratifyingly there have been extremely few side effects of a trouble-some nature.

About 4 or 5 patients have shown a good "response." Three of these have been on Tofranil (a manic-depressive depressed entering a new depressive cycle, an involutional depressive who had relapsed after electro-convulsive treatments in the past but who retained her remission on Tofranil, and a neurotic depressive who had not responded to psychotherapy). One patient who has shown a moderate response to Catron, is suffering from a schizophrenic character disorder with chronic depression;

she has experienced some relief of symptoms on Catron 6 mgs. a day.

In a private psychiatric practice dealing with a wide range of problems in a group of patients who might be considered to be more responsive to treatment than institutionalized patients, the results are disappointing and certainly not consistent with the claims made by the advertisers or in reports in the literature.

## TOXIC AND OTHER SIDE EFFECTS OF NARDIL PHENELZINE SULPHATE W-1544A

#### UJAMLAL C. KOTHARI, M.D.<sup>1</sup>

Contrary to the experiences of previous workers, we have come across cases where liver function test became abnormal after the use of this drug and one patient developed a marked drug rash soon after the first dose of Nardil.<sup>2</sup>

Toxic effects on liver: This study consists of 13 patients, on whom C.B.C., C.C.F. (cholesterol cephaline floculation), B.U.N., and urinalysis were done and were found normal prior to putting them on 15 mg. of Nardil t.i.d. Seven of them developed C.C.F. 1+ to 4+ during the treatment. For simplicity and better understanding they are divided into 3 groups.

Group A consists of 2 patients who developed C.C.F. 2+ to 3+ after one week's treatment. In one when the medication was continued, C.C.F. became increasingly positive. When the drug was discontinued, C.C.F. returned to normal. When the drug was discontinued with the other patient, C.C.F. became normal immediately. Same patient was again put on smaller doses increasing gradually to 15 mg. t.i.d. without further sign of liver damage.

Group B consists of one patient who not only developed C.C.F. 3+ after one week's treatment but also developed C.C.F. 2+ to 3+ after few weeks' treatment as a cumulative toxic effect like group C. C.C.F. in this case returned to normal on reducing the drug.

Group C includes 4 patients who did not show any immediate hepatotoxic effect but did develop C.C.F. 1+ to 2+ after few weeks' treatment. In two of them, the next C.C.F. report was normal despite con-

tinuation of the drug; but one showed more positive C.C.F.

None of them developed any clinical sign or symptom of liver disorder.

Drug rash: Unlike the reports by previous workers, one of our patients developed a marked, red macular rash with mild itching all over the body, which did not respond to usual anti-histamine treatment but gradually disappeared on discontinuation of the drug. Same patient was placed on smaller doses which were gradually increased to 15 mg. t.i.d. without further reaction.

Other side effects: Two of our patients, having a history of fluctuating blood pressure, developed hypotensive reaction with fainting and dizziness. This effect, being mild, was prevented by reducing the medication.

Insomnia and restlessness were the complaints of 3 patients and were treated with mild sedative and Meprobamate respectively.

Nausea, vomiting and headache etc. were not noticed in our patients.

#### SUMMARY

This article being mainly about the side effects of phenelzine sulphate, its value as an anti-depressant agent is not discussed.

Risk of hepatotoxic effects of this drug is worth keeping in mind as 7 out of 13 cases showed some abnormality of liver function test. Phenelzine sulphate may produce drug rash as many other drugs do. Patients, having low or fluctuating blood pressure may develop hypotensive reaction while on this drug and should be under close supervision. Sometimes it produces side effects like insomnia and restlessness

<sup>&</sup>lt;sup>1</sup> Danville State Hospital, Danville, Pa.

<sup>&</sup>lt;sup>2</sup> Warner-Chilcott Laboratories. Phenelzine Nardil (W-1544A). For investigation use only.

which can be relieved by sedative and Meprobamate.

No toxic effects on kidneys or blood were observed in our study.

All the above effects are mild and reversible and may be treated by reducing or

discontinuing the medication and with adjuvant therapy.

#### BIBLIOGRAPHY

1. Thal, Nathan: Dis. Nerv. Syst., 20: 5, May 1959.

## CLINICAL FINDINGS AND PSYCHOPHYSIOLOGICAL TESTS OF THE EFFECTS OF A NEW PSYCHOPHARMACOLOGIC AGENT: DORNWAL 1

CARNEY LANDIS, Ph.D.,<sup>2</sup> JOHN R. WHITTIER, M.D.,<sup>3</sup> DONALD DILLON, Ph.D.,<sup>2</sup> AND RUTH LINK, M.A.<sup>2</sup>

In earlier investigations (1, 2, 3, 4), changes in psychophysiological performances were found which could be attributed to "active" psychiatric treatment methods such as psychosurgery, electroconvulsive therapy, insulin coma therapy, and certain of the ataractic drugs. The changes were shown by the tests of flickerfusion thresholds, speed of choice reaction, speed of tapping, the Purdue Pegboard dexterity, and both Test Age and Qualitative scores on the Porteus Maze. Patients treated only with psychotherapy gave no systematic test score changes or losses.

A new drug, Dornwal (aminophenylpyridone), which seemed to influence behavior without the disadvantages of sedation, was made available to us through the courtesy of Dr. John V. Scudi who suggested that we test its therapeutic properties with a probe group of hospitalized psychiatric patients.

Eleven recently admitted patients (6 schizophrenics, 3 chronic alcoholics, 2 anxiety hysterics) at the Creedmoor State Hospital were treated with either 200 mg., t.i.d. or 400 mg., t.i.d. Dornwal, each over a 2-week period. At the end of the period, the ward physicians and examining psy-

chologists rated the patients as to outcome as follows: 5 were much improved or recovered; 4 were improved, and 2 were unimproved.

The typical comment on the part of the patients after having ingested Dornwal was, "I feel calmer and more relaxed." Ten of the 11 patients made remarks to this effect, and their statements and behavior agreed for 9 of these 10 patients. Of the 2 unimproved patients, one said he felt no better nor did he behave in a calmer fashion, and one said he felt calmer but did not behave accordingly.

Two of the 11 were at first negativistic, but following treatment, negativism was reduced. Manifest hallucinatory and delusional activity was stopped in 2 patients during Dornwal treatment. The behavior and complaints of 4 others indicated reduced anxiety and tension at the end of the drug therapy and for at least one week thereafter. In one patient very evident finger tremors ceased. There was less evident depression with 4 patients. One patient stated that, "the pills slow me down." Only one patient showed any noticeable tendency to be drowsy or sleepy.

A relationship between dosage and clinical outcome was manifested. Of the 5 patients receiving Dornwal, 200 mg., t.i.d., only one was rated as much improved. Four of the 6 patients, who received 400 mg., t.i.d., were rated as much improved.

Dornwal did not depress any of the performances in our battery of psychophysiological tests. Very probably it had a slight facilitating effect upon most of the test

<sup>&</sup>lt;sup>1</sup> This investigation was facilitated by NIH grant M-872 and by assistance received from the Wallace and Tiernan Co. The latter furnished the drugs and placebos utilized. The investigation was done at the Creedmoor State Hospital. We are most grateful to Harry A. LaBurt, M.D., Senior Director, and his staff for their cooperation and assistance.

<sup>&</sup>lt;sup>2</sup> New York State Psychiatric Institute, 722 West 168th Street, New York City 32.

<sup>&</sup>lt;sup>3</sup> Creedmoor Institute for Psychobiologic Studies, Queens Village 27, New York.

measures but this facilitation was somewhat confounded by practice effects.

In terms of grouped data, no statistically significant differences between any test performances before, during, or after drug treatment were found. However, the analysis of the data for individual patients showed that Dornwal did not act to interfere with the scores on the test performances in flicker-fusion, choice reaction time, Tapping, Purdue RLB dexterity or Porteus Maze tests. In fact, particularly at the 400 mg., t.i.d. dose level, Dornwal acted as a mild stimulant.

During the two weeks that Dornwal was given, urinalysis and CBC determinations were secured at regular intervals from each patient. At no time did these measures exceed the normal range of variation.

#### BIBLIOGRAPHY

- 1. Landis, C. and Clausen, J.: J. Psychol., 40: 275, 1955.
- 2. Landis, C., Dillon, D. and Leopold, J.: J. Psychol., 41: 61, 1956.
- 3. Landis, C., Dillon, D., Leopold, J. and Rutschmann, J.: J. Psychol., 45: 275, 1958. 4. Cranston, R. E., Zubin, L. and Landis,
- C.: J. Psychol., 33: 209, 1952.

#### THE EFFECT OF DEANOL ON THE ACTIVITY OF CHRONIC SCHIZOPHRENIC PATIENTS

STANLEY L. PORTNOW, M.D., MARK B. ARDIS, M.D., AND JOHN E. LUBACH, Ph.D.1

This study was undertaken to evaluate the effect of the addition of the energizer, deanol<sup>2</sup>, to the chemotherapeutic regime of chronic schizophrenic patients. It is assumed that deanol acts as a central nervous system energizer by crossing the blood-brain barrier and being converted intracellularly into acetylcholine (1, 2). This energizing effect might be expected to be beneficial to patients who, although engaged in active chemotherapeutic and milieu treatment programs, have stabilized at relatively low levels of adjustment characterized by apathy, disinterest, and apparent lack of energy. For this investigation, it was hypothesized that any increase in alertness, readiness to relate to others, or interest in environment resulting from the addition of deanol to their chemotherapeutic program should manifest itself in an improvement in their functioning in an activity such as occupational therapy (OT).

For this 3-month double blind study,

<sup>1</sup> VA Hospital, Topeka, Kansas.

subjects were 20 male chronic schizophrenic patients ranging in age from 21 to 64, who had been hospitalized continuously for at least one year. They attended OT in two sections of 10 patients each, the assignment determined by a random selection procedure. These sections were then each divided into experimental and control groups of 5 subjects equated on the basis of evaluations at the end of a 2 week observation period. The 10 patients in the experimental groups were started on deanol in doses of 200 mg. daily for 6 weeks. The 10 control subjects received placebo. At the end of 6 weeks the dosage was raised or lowered by the ward physician according to clinical indications, some patients receiving as much as 300 mg. daily. Current medications including tranquilizers were continued and adjusted as indicated. However, no patient received another energizer or central nervous system stimulant.

During the entire investigation, bi-weekly evaluations of performance were made by the two occupational therapists who worked with both sections of patients. Evaluations were made by means of the MACC Behavioral Adjustment Scale(3) and direct ratings of sociability, activity involvement, and appropriateness of behavior. Ratings on the same scales were made by the two ward physicians to evaluate ward behavior

<sup>&</sup>lt;sup>2</sup> Deanol (2-dimethylaminoethanol) was supplied as Deaner®, the para-acetamidobenzoic acid salt of deanol, by Riker Laboratories, Inc., Northridge, Cali-

The authors wish to acknowledge the kind assistance of John W. Chotlos, Ph.D., Charles G. Hermann, M.D., Alversa B. Milan, O.T.R., Raymond E. Reinert, M.D., and Ora I. Rhudy of the VA Hospital, Topeka, Kansas.

at the beginning and at the end of the 3 months.

#### DISCUSSION AND SUMMARY

For both the OT and ward evaluations. the scores used were the combination of the ratings by the pairs of raters. In the OT setting both drug and placebo groups showed a consistent trend toward improvement as might be expected from adaptation to the experimental situation. This trend was statistically significant on 3 of the 4 measures used. However, the major hypothesis was not supported in that there were no discernible differences between drug and control groups in amount of change. This suggests that the addition of deanol had no appreciable effect in making the subjects more ready to respond in this treatment situation.

The ratings of ward behavior revealed no recognizable changes for either the experimental or control groups. As a further indication that deanol was ineffective in producing the type of improvement anticipated, the occupational therapists, ward

physicians, and other ward personnel involved were unable to guess better than chance at the end of the experiment which patients had been receiving the drug and which placebo.

Laboratory investigation during the test period included weekly determinations of SGP-transaminase, urine ictotest, nemoglobin, white blood count and differential and gamma globulin turbidity, with a monthly serum alkaline phosphatase determination. The only side effect of the drug noted was a transient leucocytesis in one patient.

These results are regarded as casting doubts on the therapeutic value of deanol for chronic schizophrenic patients.

#### **BIBLIOGRAPHY**

- 1. Pfeiffer, C. C., Jenny, E. H., and Gallagher, W.: Science, 126: 610, 1957.
- 2. Groth, D. P., Bain, J. A., and Pfeiffer, C. C.: J. Pharmacol. & Exper. Therap., 122: 28A, 1958.
- 3. Ellsworth, R. B.: The MACC Behavioral Adjustment Scale. Los Angeles, Western Psychological Services, 1957.

#### CLINICAL USES OF SCTZ-A PRELIMINARY REPORT 1

Lt. Col. KIRPAL SINGH, M.B., B.S.; D.P.M.<sup>2</sup>

SCTZ, which is a chlor-derivative of the thiazole portion of the thiamine (vit. B1) molecule (a 5 B chloroethyo-4- methyl-thiazole salt) has been favourably reported upon by some French workers (Laborit et al. 1957), in the treatment of psychiatric conditions characterised by agitation, restlessness and over-activity. Intravenous administration was found to produce sleep closely resembling normal sleep which was believed to be due to an inhibition of the cerebral cortex with no action on the reticular formation or the autonomic nervous system; its mode of action thus differing from some other tranquilizing agents. No serious toxic symptoms were encountered in the clinical trials in France.

<sup>1</sup> A detailed report is being published in the Indian Journal of Psychiatry, Oct. 1959.

· <sup>2</sup> Senior Specialist in Psychiatry, Military Hospital, Poona, India.

The drug has been used in a small series of 11 cases during the last 6 months at Poona. Five were suffering from psychotic (hypomanic 2, schizophrenic 3) and 6 from psychoneurotic reactions. All the psychotic and most of the psychoneurotic cases were agitated and restless. In 3 psychoneurotic cases the drug was used for narcoanalysis in the place of the usual barbiturate preparations like amylobarbitone (amytal sodium) or thiopentone (pentothal).

#### METHOD

The drug was administered intravenously (100 to 160 c.c.) in 3 to 6 minutes in all but 2 psychoneurotic cases who received the oral tablets only. In those who received intravenous injections the continuation treatment was in the form of tablets. In two female psychotic patients who were most uncooperative, it was decided to give ECT

and follow it by SCTZ intravenously.

In the beginning a 100 c.c. syringe was used for administering the drug but as it was too difficult to handle, it was soon replaced by a 20 c.c. syringe with a two way connection.

#### RESULTS

The intravenous injections of the drug were followed rapidly by sleep which was, however, of very short duration (a few minutes to half an hour) in most cases, thus necessitating repeated injections. There was a symptomatic relief in 6 out of 8 cases of agitation, restlessness and overactivity and one case of hypomania became completely asymptomatic within 10 days and continues so 6 months after the treatment. The drug had no effect in one case of schizophrenic (catatonic) excitement and another case of anxiety neurosis.

A chronic psychoneurotic who had used several other preparations previously gave a favourable report in respect of SCTZ tablets and said that the sleep promoting effect was very rapid and appeared within 5 to 7 minutes.

A combination of ECT and SCTZ used in two cases of this series did not produce any undesirable effect, nor did a simultaneous use of this drug and chlorpromazine lead to any untoward effect.

SCTZ was found to be adequate for the purpose of narcoanalysis and promoted the establishment of rapport in all 3 cases where it was used for this purpose; 60 c.c. of the solution intravenously was found sufficient in these cases. The patient was able to answer questions but a release of emotions reported by some French workers using the drug, and which also frequently

occurs with preparations like sodium amytal and pentothal, did not take place in any of the cases nor was there any euphoria and tendency to overtalkativeness, which not uncommonly follows, and results in a disturbed sleep, when a combination of a barbiturate with a cerebral stimulant like methodrine, is used for narcoanalysis. The use of SCTZ for narcoanalysis has not been mentioned in previous literature.

Phlebitis occurred in 5 cases, probably due to the low pH of the solution.

#### Conclusion

Owing to the small number of cases treated so far, no firm conclusions can be drawn. The drug when administered intravenously produces sleep very rapidly which lasts for a few minutes only, thus necessitating frequent injections or recourse to an intravenous drip. The quantity required at one time varies from 100 to 160 c.c. In uncooperative cases when it is difficult to administer the drug, it can be injected after giving an ECT. Phlebitis appears to be a common complication and was met with in 5 cases. Further controlled trials are indicated.

#### **BIBLIOGRAPHY**

Laborit, H., Coirault, R., Damasio, R., Gaujard, R., Laborit, G., Fabrizy, P., Charonnat, R., Lechat, P., Chareton, J.: Presse Medicale, 65: 1051-1054, June 5, 1957.

#### **ACKNOWLEDGEMENTS**

Thanks are due to Messrs. Franco Indian United Laboratories, Bombay, for supplying the drug and to the Director of Medical Services, Army, for permission to publish this paper.

#### COMMENT

#### A CHILD DIES

She was only six years old. Still she had a right to live. It was an emergency case—the all too common tragedy of the streets. This time it was a depressed compound fracture of the skull of a little child. Her condition was critical. She might not live anyway. But then again she might, if she could have everything that medical science could offer—immediate operation, and then, as indicated routine, a blood transfusion. The surgeons were there, trying to do their duty—to save a life.

But the child, being a minor, could not authorize the blood transfusion. Were there not older and presumably wiser persons who could speak for her, and satisfy that formality? Her parents were there, but they exercised their ownership rights and withheld consent to the transfusion. The child died.

Why did the parents refuse a measure that might have saved her life? They were Jehovah's Witnesses and their authority was some lines in Leviticus and Deuteronomy forbidding the children of Israel to "eat blood."

This all happened in New Jersey and is reported in the AMA News, Dec. 14, 1959.

Hospital officials plead in vain with the parents to permit the transfusion. By legal process they were brought before a judge whose efforts were likewise fruitless. There is an amendment to a New Jersey Statute which upholds the right of a parent to take the stand these parents took if it is based on a "religious belief."

This raises the question, as to the nature and quality of the religious belief involved. Is it evidence of a sound and disposing mind? Does it indicate proper parental care for the welfare of the child, even for the life of the child? In a word, are these parents suitable persons to have custody of the child? It is common knowledge that children are routinely removed from the custody of their parents on evidence that they are not receiving the proper care and protection.

In the present case this little girl could have been made a ward of the court and given the necessary treatment regardless of the parents' veto; that is, if under New Jersey law such procedure is recognized. In any case there was not time; the child was dead before the required legal steps could be taken.

The representative of the AMA News asked the attorney for the hospital what could be done to prevent recurrence of a similar situation. The lawyer replied: "I guess we need an amendment to the amendment."

The object lesson of this case in New Jersey should be taken note of throughout the land.

#### CORRESPONDENCE

#### CORRESPONDENCE

Editor, The American Journal of Psychiatry:

Sin: With reference to the clinical note entitled "A Modification of the Forrest Test for Phenothiazines" by Mr. Jack J. Heyman, Drs. M. Almudevar and Sidney Merlis in the September 1959 issue of *The American Journal of Psychiatry*, we studied the applicability of 2% FeCl<sub>3</sub> stained filter paper of different grades and textures. We found that Whatman 3MM filter paper gave discrete and stable colored spots with this modified procedure. It compared favorably in sensitivity and stability of developed phenothiazine color with a sulfonic acid cation exchange paper (Amberlite XE-69 supplied through the courtesy of Rohm &

Hass Company). Furthermore, the originally pure white Whatman 3MM paper provides a more brilliant yellow background (after impregnation with 2% FeCl<sub>3</sub> solution) and better contrast for the violet or purple color produced from phenothiazine metabolites than the off-white sulfonic acid resin paper. We feel that the advantage in simplicity of this modification can be further increased by the use of Whatman 3MM filter paper.

T. H. Lin, Ph.D., Luther W. Reynolds, B.S., Research and Development Div., Smith Kline & French Laboratories, Philadelphia, Pa.

#### REPLY TO THE FOREGOING

Editor, The American Journal of Psychiatry:

Six: Thank you for your courtesy in sending me the enclosed letter from Dr. T. H. Lin.

As a matter of fact, we had tried lighter grades of filter paper with very poor results. Dr. Lin's observation on the heavy weight Whatman 3MM paper has been confirmed by us. This paper is certainly superior to the SA-2 ion exchange resin

impregnated paper and comparable to the SA-1 paper which is much lighter in color that the SA-2.

We have been working with another modification, using Dr. Forrest's mercuric nitrate reagent. We feel that this is even superior to the FeCl<sub>3</sub> impregnated paper because we can now detect the low-dose drugs such as Stelazine, Trilafon, etc.

Jack J. Heyman.

#### **NEWS AND NOTES**

SYMPOSIUM ON LSD-25 SCHEDULED.—The first invitational conference of Napa State Hospital, Imola, California, a symposium on Lysergic Acid Diethylamide (LSD-25), will be held on Saturday, January 16, 1960, sponsored jointly by the hospital and Sandoz Pharmaceuticals. Basic science aspects of this hallucinogenic drug will be discussed during the morning; the clinical and therapeutic status during the afternoon.

Sidney Cohen, M.D., Chairman, Research Committee, Veterans Administration Center, Neuropsychiatric Hospital, Los Angeles, will be the guest lecturer. Other participants will include faculty members from Stanford and the University of California medical school, Langley Porter Neuropsychiatric Institute, and practicing psychiatrists and psychologists.

NEUROLOGY RESIDENCY BRONX V. A. HOS-PITAL.—The Bronx Veterans Administration Hospital in affiliation with Columbia University announces an approved 3 year residency program in neurology. In addition to work at the V. A. Hospital, residents spend 6 months full time at Montefiore Hospital, 4 months full time in the department of neuropathology at the Columbia-Presbyterian Medical Center, and over a period of 14 months attend various neurologic outpatient clinics of the New York Neurological Institute. Lectures in the basic sciences are given at Columbia University. The training program is under the immediate supervision of Dr. Carl B. Booth in collaboration with Dr. Daniel Sciarra, Dr. Abner Wolf, and Dr. Tiffany Lawyer, Jr.

Any interested candidates may obtain information about this program by writing directly to Carl B. Booth, M.D., Chief, Neurological Section, V. A. Hospital, 130 West Kingsbridge Road, Bronx 68, N. Y.

MASSACHUSETTS MENTAL HEALTH CENTER TRAINING PROGRAM.—To help fill the need for research scientists in the mental health field, the National Institute of Mental Health has awarded a grant of \$400,000 to Harvard Medical School and Massachusetts Mental Health Center for the training of selected psychiatric residents after their third year of training or Ph.D.s interested in mental health research careers. The candidate may be attached to one of 8 laboratories, including clinical psychiatry, social science, psychology, psychophysiology, psychopharmacology, neurochemistry and neurophysiology, for his major "arbeit." In addition there will be interdisciplinary seminars involving the designated laboratories from the Harvard Quadrangle and from the Massachusetts Mental Health Center Research Department. Special formal and informal instruction also will be arranged to suit the candidates' needs.

The program is under the direction of Dr. Milton Greenblatt (Assistant Superintendent and Director of Research at the Center), and Dr. Jack R. Ewalt (Superintendent and Professor of Psychiatry).

LATIN AMERICAN SOCIETY OF EEG AND CLINICAL NEUROPHYSIOLOGY.—Because of the expanding interests in the branch of electroencephalography and clinical neurology, the South American EEG Society has incorporated as one of its members the Mexican Society of EEG. This incorporation has brought a change in the name of the EEG Society which henceforth will be known as the Latin American Society of EEG and Clinical Neurophysiology.

Its Officers are: Dr. Carlos Villavicencio, of Santiago, Chile, President; Dr. Paulo Vaz de Arruda, of Sao Paulo, Brazil, Presidentelect.

Dr. Abraham Mosovich, of Buenos Aires, Argentina has been elected Honorary Secretary of the newly expanded society.

DR. BRODY HEADS PSYCHIATRY, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE.—Dr. Eugene B. Brody has been appointed Chairman of the Department of Psychiatry and Director of The Psychiatric Institute of the University of Maryland School of Medicine. He succeeds the late Dr. Jacob E.

Finesinger. Dr. Brody came to Maryland from Yale in 1957 as professor of psychiatry and has been Psychiatrist-in-Chief of the University of Maryland Hospital and The Psychiatric Institute since 1958.

AMERICAN PSYCHOPATHOLOGICAL ASSOCIATION, INC.—The Association will hold a symposium on the "Psychopathology of Aging" at its 50th annual meeting at the Park Sheraton Hotel, New York City on Friday and Saturday, February 19 and 20, 1960. This symposium will be published in the course of the year.

Guideposts To Mental Health.—A revised edition of Guideposts to Mental Health is now available from the New York State Department of Mental Hygiene. Most popular of the department's many publications, the seven-pamphlet series has required 8 printings to distribute more than 2½ million copies since its debut in 1949. The text was written by Margaret M. Farrar, director of mental health education and information.

Single copies or complete sets of the series, titled Life Begins, School Days, Teen Time, Your Marriage, Your Job, The Middle Years, and The Golden Age, may be obtained by anyone without charge from the Office of Mental Health Education and Information, Department of Mental Hygiene, 240 State Street, Albany, N. Y.

AMERICAN PSYCHOSOMATIC SOCIETY.—The 17th annual meeting of the society will-be held at the Sheraton-Mt. Royal Hotel, Montreal, Saturday and Sunday, March 26 and 27, 1960.

At the Sunday morning session there will be a panel discussion on contributions of behavioral scientists to psychosomatic medicine by speakers representing anthropology, medicine, psychiatry and sociology.

Registration fee for non-members is \$5.00, students, interns, residents and fellows \$1.00.

LONDON CONFERENCE ON THE SCIENTIFIC STUDY OF MENTAL DEFICIENCY.—The London conference on the scientific study of mental deficiency will be held July 24-29, 1960, at the British Medical Association's Headquarters, Tavistock Square, London, W.C.I.

A wide range of subjects will be covered providing information on the latest scientific developments in the field of mental deficiency with opportunities for discussion. Invitations to give papers have already been provisionally accepted by outstanding workers from Great Britain, Belgium, Denmark, France, Germany, Holland, Sweden and the United States.

Membership of the conference is open to professional workers in all branches of the mental deficiency field; medical, psychological, educational, social and administrative.

Further information may be obtained from the president of the International Conference Committee of the American Association on Mental Deficiency, Mr. Harvey A. Stevens, 301 Troy Drive, Madison 4, Wisc., or from Arthur W. Pense, M.D., New York State Department of Mental Hygiene, 240 State Street, Albany, N. Y.

TWELFTH ANNUAL INSTITUTE IN PSYCHIATRY AND NEUROLOGY, NORTH LITTLE ROCK, ARK.—This annual institute will be held February 25 and 26, 1960, at the North Little Rock Division of the Consolidated Veterans Administration Hospital.

In addition to psychiatric sessions, there will be conferences in clinical psychology, psychiatric social work, psychiatric nursing and dietetics. There will be various social activities including a dinner the evening of February 25 when Dr. Mathew Ross will be guest speaker.

THE HOFHEIMER PRIZE.—This prize of \$1,500 is awarded annually by The American Psychiatric Association for an outstanding research contribution in the field of psychiatry or mental hygiene which has been published during the previous 3-year period. Studies in press or in preparation are not eligible.

This competition is open to citizens of the United States and Canada, not over 40 years of age at the time the study was submitted for publication; or to a research group whose median age does not exceed 40 years. The next award will be made at the annual meeting of the Association in May 1960. Entries submitted to the Prize Board before March 1, 1960, will be considered. It is imperative that 8 reprints or duplicated copies of each entry as well as the necessary data concerning age and citizenship be sent to David A. Hamburg, M.D., Chairman, Hofheimer Prize Board, National Institute of Mental Health, Bethesda 14, Maryland. All entries are independently evaluated by each member of the Hofheimer Prize Committee and final selection determined by equal vote.

TAPE RECORDINGS, THE WOODS SCHOOLS, LANCHORNE, PA.—The president of the Woods Schools announces 2 new recordings from the conference on "Counseling Parents of Children with Mental Handicaps" held in cooperation with the University of Minnesota:

- "Counseling with Parents at Time of First Knowledge of Retardation," by Reynold A. Jensen, M.D., Professor of Psychiatry and Pediatrics, University of Minnesota.
- "Helping Parents in a Community Setting," by Harriet E. Blodgett, Ph.D., Assistant Professor, Institute of Child Welfare, University of Minnesota.

These records (12-inch, double-sided, high fidelity discs) can be borrowed for group meetings without cost except for shipping charges both ways. Three weeks' advance notice necessary.

Survey of Psychiatric Facilities in Colorado.—At the invitation of Governor McNichols of Colorado, Governor Rockefeller of New York has authorized a survey of psychiatric facilities in the former state by Commissioner Paul H. Hoch of the New York service. Dr. Hoch will go to Denver late in January where he will aid in setting up a long-range mental health program.

In giving his approval, Governor Rockefeller said, "The administration is happy to cooperate in strengthening mental health programs in the states and to make Dr. Hoch's services available to that end."

Correction.—In the December 1959 Journal, line 8 of footnote 3, page 549 should read . . . 10 to 150 mg. . . . instead of . . . 10 to 15 mg. A further correction made by the author is that the last paragraph on p. 549 should start: "Trifluoperazine (Stelazine) . . ." instead of "Triflupromazine . . ."

BIRTHDAY PORTRAIT FOR CLARENCE B. FARRAR.—On his eighty-fifth birthday, November 27, 1959, at a dinner in his bonour at the Albany Club, Toronto, Dr. Farrar was presented with his portrait, painted by the well-known artist, Archibald Barnes, R.C.A.

Former students and colleagues had gathered from many points in Canada and the United States to pay tribute to a great teacher. Professor D. Ewen Cameron of Montreal made special mention of the guest of honour's important contribution as Editor-in-Chief of the Journal of the American Psychiatric Association since 1931.

Dr. C. M. Hincks spoke about the "early days," drawing attention to the fact that Dr. Farrar was the first full-time professor of psychiatry in Canada on his appointment in 1925. Dr. D. G. McKerracher of Saskatoon dealt with the postgraduate era, depicting "a conference" with great clarity and humour.

After presentation of the portrait, Dr. Farrar replied by thanking the contributors and then went on to pay tribute to his predecessor, Dr. C. K. Clarke as well as others who had been associated with him until his retirement in 1947.

Congratulatory telegrams were releived from individuals and organizations attesting the esteem in which he was held as Professor, Department of Psychiatry, University of Toronto: and, in a sincere and witty epilogue, Professor A. B. Stokes summarized the sentiments held by all who have been fortunate enough to be associated with Dr. Farrar in his long career of such great significance to the advancement of Fsychiatry.

#### BOOK REVIEWS

OBJECTIVE APPROACHES TO TREATMENT IN PSYCHIATRY. By Leo Alexander, M.D. (Springfield: Charles C Thomas, 1958, pp. 139. \$4.50.)

Anyone venturing to write a textbook on treatment in psychiatry during 1958 was a brave person. So much was happening in so many fields; approaches came from diverse areas; results of various treatments remained open to question; yet great progress was being made during this year.

The writer of this review can vouch for the fact that Dr. Alexander is a brave pioneer in the many facets of psychiatric treatment. Also, he is about as objective and scientific, yet pragmatic as any contributor in the field of

psychiatric therapy.

To condense the Treatment in Psychiatry to a little over 100 small pages must have been a prodigious undertaking. And Dr. Alexander must have known full well that many aspects of his "arbeit" would change from the time he submitted the manuscript until the book came out and reviews were published.

That Dr. Alexander is eclectic in approach is not to be denied. He is well qualified in psychoanalytic therapy. He has had extensive first-hand experience in the various types of shock treatment as well as the numerous drug therapies. His range of experience extends from state mental hospitals through army service to private practice, both abroad and in this country.

As the title indicates, the author starts with a plea for objectivity in acceptance of treatment methods, recognizing that almost all psychiatric therapy is empirical and symptomatic. Sharpening of diagnostic and prognostic evaluations is called for as a firmer basis for therapeutic decision. Considerable emphasis is placed on the Funkenstein test and other autonomic test responses in relation to treat-

Throughout the book there are numerous interesting, discerning and challenging discussions that help to bridge the gap between "organic" and "functional" viewpoints. The "organic" is in the field of neurophysiology and not in pathology or anatomy except for consideration of the autonomic system. The Pavlovian theories pertaining to excitation and inhibition (and as refined and elaborated by Gantt and others) are brought into the interpretation of anxiety, depression, hallucinosis, delusion formation, etc. The effect of these

emotional and physiological factors on the ego, and reaction of the ego to them become an important part of the total picture that is the guide for treatment. A review cannot do justice to the clearly stated and documented theories put forth by Dr. Alexander.

In this volume there are some rather definite statements about the "treatment of choice," such as the value of insulin shock therapy in schizophrenia, the excellent results of ECT in depressive conditions and the advantages of psychotherapy in neuroses. In "Drug Therapy," Chapter V, the author gives a compressed (20 pages), yet fairly complete survey of this rapidly expanding field. "Frontal Lobotomy" is discussed in 5 pages and brought into an up-to-minute perspective as a therapy of last resort. Again, the author was brave in attempting to discuss psychotherapy in 19 pages, but nevertheless there is much food for thought in this chapter which reflects Dr. Alexander's personal eclectic approach and understanding.

The extensive list of references is well chosen and the volume has an excellent index. This small volume should not be judged by its size. It is recommended for reading by psychiatrists, neurologists and others in related fields, not so much as a guide for specific therapy in an individual case but for stimulation to further thought and research in therapy with due consideration of Dr. Alexander's hypotheses and his pragmatic yet objective

approach.

LLOYD J. THOMPSON, M.D., Winston-Salem, N. C.

GROSSE NERVENÄRZTE. Vol. II. Edited by Kurt. Kolle. (Stuttgart: Georg Thieme Verlag, pp. vii + 251, 14 ills., 1959. D.M. 29.40. \$7.00.)

In 1956 Professor Kolle brought out a volume, titled as above, containing biographies of 21 great neurologists and psychiatrists of the modern era, the earliest included being Pinel. He called attention to the difficulty, in order to keep the book within bounds, of making selections from among the many great names of the 19th and 20th centuries; and held out the possibility that a second series might follow. Here it is. And now again the compilation involved the same problems as the first. Judging by the importance of this work one may hope that a third volume may. be under consideration. In his preface the Herausgeber even indicates that likelihood.1

The persons whose life stories are told here are: Golgi, Nissl, Alzheimer, Brodmann, the Vogts, Helmholz, Quincke, Esquirol, Th. Meynert, Wernicke, Adolf Meyer, Gaupp, Pierre Marie, Babinski, Henry Head, Economo, Horsley, Walter Dandy, Clovis Vincent, Dubois, Hermann Simon.

It is especially to be noted 'that Kolle selected his collaborators on the basis 1) of their established research record; 2) of their expert knowledge of their subject; 3) as far as possible, of their close personal contact with the persons they were to write about. Any one who has heard a speaker discuss a great man he, the listener, has intimately known, but the speaker has not, will appreciate the importance of the third qualification.

To mention a few of the contributors to the present volume: the editor writes about Geheimrat Heinrich Quincke who often accompanied his father, Geheimrat Kolle, and himself, then a medical student, on their evening walks. The debt of psychiatry and neurology to lumbar puncture, first practiced by Quincke and reported in 1891, can hardly be overestimated.

Henri Ey contributes the biography of Esquirol, friend and favorite pupil of the great Pinel. It was Esquirol who was mainly responsible for asylum reform in France and for the humane provisions of the Act of 1838 which still holds good today.

Sir Geoffrey Jefferson has written the chapter on Victor Horsley, scion of a family of musicians and painters. Horsley's pioneering hypophysis operation is dealt with, and Cushing's criticism and the differences between the two great neurosurgeons are touched upon.

Erwin Stransky writes about that singular scholar Constantin von Economo. Born in Rumania of a distinguished Greek family, he grew up in Trieste where language and culture were mainly Italian and chose Vienna as his ultimate home. He is famed as the discoverer of encephalitis lethargica (1917).

Oskar Diethelm is the author of the biography of Adolf Meyer; whose formulation of the concept of psychobiology wherein a multiplicity of factors, genetic, psychological and social, determining habit formation and personality type and likewise predisposition to mental health or illness, has been widely influential in both American and British psychiatry. His teaching has been aptly summed up as a "common sense psychiatry."

In writing about Franz Nissl, Hugo Spatz points to the remarkable fact that Nissl, the 24-year-old medical student at the University of Munich, wrote a prize essay on the pathological changes in the nerve cells of the cerebral cortex, wherein he was first to describe the particles embedded in the cytoplasm which have ever since borne his name, differentiated fixing and staining methods for different structures, as cells and fibres, described 7 forms of pathological nerve cell changes, likewise the laminar structure of the cortex—in short in that astonishing student essay laid the foundation of the histopathology of the cerebral cortex, indicating the changes characteristic of general paresis and showing the possibility of differentiating other psychoses associated with organic brain changes.

It would be a pleasure to give more than these fragments of the stories mentioned above, and to include reference to the other biographies as well, but there isn't room. Professor Kolle addresses this volume, like its predecessor, particularly to the younger psychiatrists and neurologists that they may become acquainted with the achievements of their great predecessors, upon whose shoulders, mayhap, some of them may one day stand to push outward still further the boundaries of knowledge.

C.B.F.

Basic Issues in Psychiatry. By Paul V. Lemkau, M.D. (Springfield: Charles C Thomas, 1959, pp. 106. \$3.50.)

This is a book, addressed primarily to general practitioners, which opens a perspective that many busy psychiatrists have lost sight of in their preoccupation with problems immediately at hand. It comprises a series of lectures, given in a post-graduate program, sponsored by the American Academy of General Practice. They were correlated with a series of lectures on internal medicine and pediatrics. The author makes some tantalizing references to the contribution of his colleagues in his discussion of his own concepts of basic psychiatric issues.

The author, trained as a psychiatrist, is Professor of Public Health Administration at Johns Hopkins University, and is in a unique position to furnish the reader with refreshing and provoking glimpses of what psychiatry is doing and where it may be going. Dr. Lemkau's method of doing this is disarming. His style may seem a little bewildering and too innocent to the beginner, but around any corner, one may come upon a few simple statistics, garnered from unexpected places,

<sup>&</sup>lt;sup>1</sup> See also Kolle: Kraepelin und Freud. Beitrag zur neueren Geschichte der Psychiatrie (Stuttgart: Georg Thieme Verlag, 1957, pp. 88. \$1.80.)

which are startling and thought provoking. A typical example concerns the findings of a psychiatrist who was general practitioner, for 4 years during the war, to a village of 2,500 in northern Norway. Other equally startling items suggest the possibility that psychiatrists will soon have to face a very real problem as to where the boundary lines of psychiatric practice should be drawn.

Basic Issues In Psychiatry makes no pretense of being exhaustive and is therefore easy to read. This reviewer would like to read it again, supplemented by a perusal of some of the biographical references to work already done and in process of completion. It would make him a wiser clinician and a more challenging teacher.

WILLIAM G. YOUNG, M.D., University of Vermont.

PSYCHIATRIC ARCHITECTURE. Edited by Charles E. Goshen M.D. (Washington: the American Psychiatric Association, 1959, pp. 156. \$10.00.)

This book presents selected materials produced by the Architectural Study Project established in 1953 under the joint auspices of the American Psychiatric Association and the American Institute of Architects. The aims of the Project were to develop effective communication between the professions of psychiatry and architecture, and to define the basic principles which determine good mental hospital design.

It is apparent from the first 5 papers and from other comments throughout the collection that a considerable number of the contributors conceived the goal as the development of architectural design that would have a positive therapeutic effect on the patient.

There is considerable comment on how the patient perceives space and the arrangement of space, how he is affected by colour, sound, odour, and texture, and how personal interaction is hindered or facilitated by the arrangement of space and furnishings. However, the comment is largely speculative. Many questions are asked but few are answered. The papers describing actual units are not closely related to these theoretical discussions but adhere to the more familiar and less speculative approach which seeks chiefly to provide unobtrusive surroundings which will not interfere with the therapeutic process, avoiding traditional institutional characteristics. Although it is only mentioned once or twice, the reader feels the implication that the concept "hospital" now conveys too much of illness, regimentation and limitation, and that it is being replaced by "home," "hotel," or "country-club."

One quality of design universally approved but not adequately discussed is "flexibility." The description of "transitional spaces" in the article on Chestnut Lodge is worthy of note.

Personally, I enjoyed the speculative and theoretical discussions as well as provocative concepts and phrases such as "facilities for inactivity." For the more practical there are helpful lists of requirements and general specifications, descriptions of layout and equipment, and "A Check List for Mental Hospital Planning." However, in no sense of the word can this book be considered to be a manual of hospital design.

To round it out there is a 23-page article on "Mental Health Programs and Facilities in Europe and Asia" illustrated by 45 colour prints, which perhaps only confuses a seeker for the "right" pattern by showing what variety exists

Two glossaries on "Mental Hospital Terms for Architects" and "Building Terms for Mental Hospital Administrators" will be of interest to the uninformed.

> B. H. McNeel, M.D., Dept. of Health, Toronto

HANDBUCH DER NEUROSENLEHRE UND PSYCHO-THERAPIE. Edited by Viktor E. Frankl, M.D., Victor E. Freiherr von Gebsattel, M.D., and J. H. Schultz, M.D. (Munich and Berlin: Urban & Schwarzenberg, 1958, Parts 1-7, DM 19,-\$19.50, 14,- 15,- 21,-\$18.50, and 20,-)

The Handbuch, to be published in 5 volumes, each about 750 pages, will first appear in parts (Lieferungen), unbound. Each part will comprise up to 160 pages, and the contributions will be monographs. The entire field of the neuroses and psychotherapy will be treated, from the individual points of view of the authors; however, controversial questions will be treated by two authors differing in point of view. The editors of the Handbuch believe that there is such a thing as a common basis underlying different views, and that it is the common basis on which psychotherapy will be built in the future.

Part 1 is devoted to the "suggestive methods" giving a comprehensive survey of the varied views on this method. Bernard Stokvis, one of whose two contributions is annotated by no less than 370 references in the bibliography, reports on various suggestive and autosuggestive methods, including less known but

significant details such as rationelle or primitive auxiliary aids. In his other contribution, Stokvis considers experimental-psychological matters relating to hypnosis, which go beyond the author's own recently published textbook. Of particular importance seem to be the psychosomatic aspects and the possibility of a clinical hypnosis. Ernst Kretschmer presents his two-way "standard method" (a combination of analytic and suggestive methods), which conceivably could constitute the psychotherapy of the future, particularly in shortterm psychotherapy. His son, Wolfgang, writes on *Protrepik*, which combines all those methods that free the patient from his neurotic Fehlhaltung (disturbance) through sensory and verbal stimulation. The characteristic of this method is the *Dressur* of the patient. For instance, electric currents are used in treatment, and certain successes have been reported in cases of hysteria. Betz speaks about mediative methods, particularly the Bildstreifendenken. Certain combinations of pictures are transmitted to the patient in a motion-picture form while he is "relaxed". The author thinks that this method is not used widely in Germany. and this reviewer wonders where it is used "widely." Erwin Stransky contributes his wellknown Subordinations-Autoritaets-Relationstherapie: the therapist appeals to the will of the patient first. However, it cannot be assumed that today's crop of therapists like this type of therapy (or, for that matter, Protrepik), as it runs counter to the transference relationships between therapist and patient, which are most in demand today.

Part 2 contains an excellent contribution by Strumpfl on "Heredity and Neurosis." The controversial subject of the heredity of the neuroses is handled in a new way, including the experiences of those psychologists who experiment with animals. Unfortunately, the author did not take into consideration Rene Spitz's research on the origin of neuroses in infants. Wolfgang Kretschmer writes on "Neurosis and Constitution" much in the same way as his father, Ernst, has taught this subject for many years, but Wolfgang treats the subject more comprehensively and brings the possibilities of the Konstitutionsforschung up to date. Birkmayer tells of the "vegetative syndromes" and stresses the pathogenetic and individual factors. He differentiates between a "sympathetic hypertony and hypotony" and a "para-sympathetic hypertony and the vegetative ataxia," which, according to Birkmayer, -interacts in the disturbance of coordination and the vegetative regulation. Of particular

interest to this reviewer are the 3 contributions by Freiherr Victor von Gebsattel, on the phobic, the "anakastic" and the depressive Fehlhaltung (disturbance). The causes of these disturbances are examined philosophically, yet no attempt is made to engage in speculations.

Part 3 is designed to give the reader a survey of the history of psychotherapy, and presents the present trend as well as developmental tendencies of individual cultures. Eliasberg writes magnificently on the history of psychotherapy. He asks many questions, as about social and psychological causation or "What is Cure?," etc. His contribution is amended by J. H. Schultz, who tells the reader of the historical situation in Europe. Pflanz writes on "Psychotherapy in Central Europe," Reiter on "Denmark," Harding on "Sweden," Johnson on "Norway," Kammerer on "France," and Stengel on "Great Britain."

In Part 4 the trends in Italy are discussed by Cargnello and Cesa-Bianchi, in Spain by Sarro, in Eastern Europe by Voelgyesi, in Russia by Kleinsorge, in China by Otto, in the USA by Hofstaetter; non-analytical psychotherapy in Latin America by Binder, and Psychoanalysis in Latin America by Kemper. For the German reader, the article by Hofstaetter is of the greatest value, as not only is the literature discussed but also critically evaluated. Although the value of Parts 3 and 4 lies in their source material for the German reader, they would appear to have the same value for the English reader, as most of the material, apart from Hofstaetter's article, is nearly unknown in the U.S.A. Thus the reader can familiarize himself with the cultural, ideologireligious, and schismatic differences among the various countries.

Part 5 deals with organismic treatments, such as J. H. Schultz's Autogenes Training, which the author invented and which never got a foothold in this country. Instead of reading a voluminous book on this subject, the reader gets the idea in the sometimes hard-to-read form of an abstract. E. B. Strauss and W. F. Coningsby write on narcoanalysis. Lucy Heyer-Grote on breathing-therapy, and our own J. L. Moreno on "Psychodrama," a subject more familiar to Europeans, where it originated, than to us.

Part 6 is partly entitled "Grcup Psychotherapy" and partly "Psychotherapy in Psychotic Illnesses." The former contains 2 articles by A. Friedemann, in essence equating group psychotherapy with sociogram and psychodrama à la Moreno (with which many

American group psychotherapists will take issue), only to a small degree taking cognizance of non-psychodramatic methods in group psychotherapy, particularly the psychoanalytic method, today perhaps the most widely practised approach in group psychotherapy in the U.S.A. The author does not avoid personalities, but, so far as the sociogram and psychodrama only are concerned, presents these methods founded by J. L. Moreno in an easily readable style.

The balance of Part 6 is devoted to the Psychoses,—R. Kraemer, P. Matussek, Victor E. Frankl and J. H. Schultz sharing the honors. J. Segers contributes a special article on the "Possibilities (of psychotherapy) within the frame of stationaer-psychiatrischer Behand-

lung" in institutions.

Part 7 is devoted to Fehlhaltungen (disturbances) only, dealing with the perverse, schizoid, parancid, and impulse types of mental illnesses. The contributors are P. Matussek, J. H. Schultz, W. Th. Winkler, and H. Giese.

All told, the present endeavor is probably one of the most ambitious ever undertaken in neurology and psychiatry. This work also attempts to be as comprehensive as possible, but falls short in the eyes of many American readers because of the wide diversity of approaches and points of view. Nevertheless, comprehensiveness (in my opinion) can seldom, if ever, be satisfactorily achieved. Looking at the first 7 parts, one can only be amazed at the richness, immensity of outlook, and newness of territory. Almost any American reader will be glad to know that there is such an encyclopedic reference that will answer almost any question known to date to the medical and psychological researcher, practitioner, and student.

> Hans A. Illing, Los Angeles, Calif.

80 PUERTO RICAN FAMILIES IN NEW YORK CITY. By Beatrice Bishop Berle, M.D. (New York: Columbia University Press, 1958. \$4.75.)

In a period when sociology and anthropology have become almost as heavily burdened by abstruse terms and cliché references as psychiatry, it is most refreshing to come upon a really unpretentious piece of scientific writing. Medical education, too, has been criticized because it tends to teach all about rare and complex diseases and neglects "the problems of every day life"; this little book may help restore the balance.

A physician and a smeall group of helpers

set up medical practice in a slum inhabited mainly by Puerto Ricans and settled down to give service and, by thus earning the opportunity, to make observations on how the patients and their families live, subsist, relate to each other and to the social institutions around them. While considerable attention is given to disease and its effects, the book contains much more: the advantages of emergency room treatment over outpatient clinic attendance, the balancing of values of a good set of teeth compared to loss of time at work, the usefulness of one religious denomination as compared to another, the issue of how to change from white to blue collar class without loss of dignity or face. These and many other problems were posed by the 80 families who came under observation. Sometimes the problems were solved satisfactorily, sometimes there was continued and dismal failure. The sympathy and sensitivity with which the observations were recorded indicates that the author was able to achieve a genuinely non-judgmental attitude that allowed her to get facts rather than defenses.

There are few generalizations suggested. This is a descriptive study, not an analytic or synthetic one. It was associated with an anthropological study on a larger scale and had careful controls and checks on the observations made, but in the writing of this book we see only a perceptive clinician, not an obsessive theorist or one who needs to formalize her wisdom too much. It is a refreshing and humanistic study, real, down-to-earth. Anthropology and sociology need more like it and medical education needs them, too.

PAUL V. LEMKAU, M.D., Johns Hopkins University, School of Hygiene and Public Health.

La Formacion Espirituel del Individuo. 4th Ed. By Honorio Delgado. (Barcelona: Editorial Científico-Medico, 1958, pp. 197.)

The author surveys briefly the various schools of psychological thought: the experimental, reflectological, behavioristic, psychoanalytical, individual, gestalt, genetic and biogenetic. He then describes the physical, mental and emotional developments during infancy, childhood, preadolescence and adolescence. Of particular interest is the "Scheme of physical development of the individual" in table form. This is followed by the study of the mind in the process of formation.

The author treats the problem of personality from the viewpoint of a religious moralist with little attention paid to the dynamics of behavior as understood presently in modern texts.

"Culture is human life guided by spiritual value." He also ascribes determining influences to "blood and race," a theory that recalls the much discredited racism. "Faith and tradition" are extensively used throughout the book, but specific psychological and theological definitions of these terms are not given.

Hirsch L. Gordon, M.D., New York City.

THE BORDERLAND OF EMBRYOLOGY AND PATH-OLOGY. By R. A. Willis. (London: Butterworth & Co., 1958, pp. 660. \$18.00.)

The most fascinating book I ever read in anatomy was Sir Arthur Keith's Human Embryology and Morphology. It is the only book of its kind I know which reads like an exciting detective story. When, then, I read Dr. Willis' statement that Keith's book had long excited his interest and admiration, and that it was this work that brought him to England to study under Keith, I was prepared to find a book as informative and readable as Keith's-and I was not disappointed. This is an altogether thoroughly admirable book in every way. A pathologist with a natural desire to know the reason why, Dr. Willis here brings together the estimable results of his researches, reading, and reflection to give us what is probably the best account in any language of the conditions during development productive of pathology in man. Every aspect of the subject is covered, and almost all the many original illustrations are from the author's own preparations. There are excellent chapter bibliographies, and a good index.

The attractiveness of the book is such that it should gather a wide variety of readers within the charmed circle of its pages, for it deals with no less than the matter of human devolopment, and what may go wrong with it morphologically. And anyone interested in man, ought to be interested in that. Dr. Willis can be recommended as the perfect guide to morbid developmental embryogenetics.

Ashley Montagu, Ph.D., Princeton, N. J.

EXPLORATIONS IN SOCIAL PSYCHIATRY. Edited by Alexander H. Leighton, John A. Clausen, Robert N. Wilson. (New York: Basic Books, 1958. \$6.75.)

Social Psychiatry in Action. A Therapeutic Community. By *Harry A. Wilmer*. (Spring-field, Ill.: Charles C Thomas, 1958. \$8.75.)

Neither the term "social psychiatry" nor its

concept appears to be native to this country; while social psychiatry is not a new method, it is an innovation here. There are several reasons for this reluctance of American psychotherapists (as contrasted with European, particularly English, colleagues) to adopt this method in this country. For one thing, "social psychiatry," especially as applied to a therapeutic community, denotes the treatment of a relatively few patients within a specially created setting, no matter how closely related to the "real" community, calls for an expensive outlay on buildings and personnel. Social psychiatry in therapeutic communities, therefore, is nearly non-existent in this country, and the few experiments made with this method, such as undertaken by S. R. Slavson, Fritz Redl, and Bruno Bettelheim, made "headlines" in professional circles because of their uniqueness.

The present volumes published simultaneously may indicate a changing attitude toward the treatment of the mentally ill, transferring it from the doctor's office or the hospital's ward to the community. The first book, Explorations in Social Psychiatry, has 18 contributors. The collection is uneven, since some of the contributors write about such topics as "Adolescent Drug Use" without really integrating the subject with social psychiatry. In addition, the editors, in a brief footnote, observe that social psychiatry has "somewhat" different meanings in America and abroad. Their own definitions are, in this reviewer's opinion, incorrect, inasmuch as the term "social psychiatry" is an imported, and not an indigenous, term, which most certainly cannot be applied to industrial and forensic psychiatry, as the editors think it can; on the other hand, group therapy, which the editors feel is practised here but not abroad, cannot be isolated from the imported concept of social psychiatry since the latter was derived from group therapeutic concepts, and is the underlying method common here and abroad.

However, the value of Explorations appears to this reviewer to be immense. The contributors speak of a "community" (not the community), a township, which makes mental health programs possible whether through taxation or through voluntary efforts, such as chest drives. The "therapeutic community" is nowhere mentioned. Yet, the trend toward the tendency to consider the therapeutic needs of the individual beyond those needs which he has as a patient is evident everywhere. The editors have set themselves the task of examining 5 aspects: 1. The prevalence of mental illness, 2. The need for a concept of mental

7

illness, 3. The relation of mental illness to social pathology, 4. Socio-cultural changes, and 5. Personality development. It seems to this reviewer that, no matter how social psychiatry is defined, only aspects 3 and 4 are really related to social psychiatry, whereas the others are outside the topic of the book (not, of course, outside the province of psychiatry per se). Such chapters as "Health and the Social Environment" are the highlights of the book; and a statement like "some disturbances of mood, thought, and behavior occur as a part of man's adaptation to his social environment," while commonly accepted today, deserves to be explored more widely. Hence, the author's inquiry into the relationships among the 3 variables,-social environment, psychological disturbances, and bodily illnesses. The shortcomings of the book (inadequate conception of "social psychiatry," exclusion of previously published material here and abroad and hence omission of credit to the pioneers in this field, the dearth of case illustrations) are more than outweighed by the "explorations" and importations of Continental ideas (even though the editors might deny this) in a field hitherto very little known in America.

Social Psychiatry in Action, on the other hand, has, as its sub-title, "A Therapeutic Community," and thereby already indicates the aspects which it deals with. This book has adequate references (about 700 items) including most of the sources by the pioneers of social psychiatry, such as Bierer, Maxwell Jones, Ezriel, Bion in England; Slavson, Redl, and Bettelheim in this country, to mention a few. The author experimented with his therapeutic community at the psychiatric admission ward at the Naval Hospital in Oakland, California, and the book contains case histories only. He included but little theory and background for the concept of social psychiatry, leaving it to the reader to delve into the sources. It should be noted, however, that the term "community" is used by the author in a different sense than in England (where a community actually is created physically by the establishment of grounds, buildings, etc.) in that a ward of an existing hospital is "set aside" for the purpose of a community. However, as such, this ward community may be a "first," and therefore the "changing society on the ward," the roles of the various therapists (corpsmen, nurses, psychologists, and social workers) and community meetings (almost all based on group psychotherapeutic methods) are discussed in great detail and will enlighten many practitioners as to the employment of group meetings, spontaneous, face-to-face interaction, and the revelation of hidden "community" tensions, feelings and needs, to mention but a few. Therefore this volume will enrich our present literature, as, on the whole, will also the anthology of *Explorations*.

HANS A. ILLING, Los Angeles, Calif.

Nekrophilie. Strukturanalyse eines Falles. By *Th. Spoerri*. (Basel/New York: S. Karger, pp. 92. Bibliotheca Psychiatrica et Neurologica Fasc. 105, SF 15.)

Karl Birnbaum introduced the concept of structural analysis into psychiatry in 1923. Since that time this concept has been used with a variety of meanings. Spoerri defines structural analysis as the analysing consideration of a case in respect to the real relations within the totality of this case and the elaboration of the particularity of these relations.

The case is a necrophiliac with the diagnosis: dysplastic, schizoid, autistic-eccentric, unintelligent psychopath of depressive temperament with additional depressions. The man, now 33 years old, committed between 1946 and 1953 5 necrophilic acts. He always exhumed female corpses, inspected them—especially the genitals—, cut them up and apparently in one instance made a coitus-like play. The later the delict occurred, the longer had the women been dead and, accordingly, in a more progressed state of decomposition.

The necrophiliac was exculpated in court with the diagnosis schizophrenia which still may be clinically the correct one. He gave the author little insight into his history and inner life. Hence the author had to take recourse to his and preceding observations, to the Rorschach, and to a considerable amount of interpretation. There were a number of suicidal attempts and self-injuries as well as several escapes from the mental hospitals.

The author comes to the conclusion that amorphousness is the structurally essential element in his case. He endeavors to show the "impression of the amorphous" in the man's mimicry and gestures, in his manner of speaking, in his way of experiencing, in his life course, even in his attempts to escape from the hospitals. The amorphousness, in the author's opinion, is manifested also in incomplete distinction between inside and outside and in the sexual desire for the—increasing—amorphousness of dead bodies.

An interesting chapter on the literature of necrophilia, including belles letters is very carefully done. Remarks on the forensic adjudgment are briefly made. In the last chapter

the problem of necrophilia, *i.e.* of necrophilia in the broader and of necrophilia in the narrower sense, is discussed at some length.

The author has worked hard to get and to interpret the accessible material. One cannot help wondering when and how the cardinal point of amorphousness was taken into consideration: As the author has done his structural analysis with his own self-forged tool, there would not be much sense in discussing details which after all stand and fall with the acceptance of this tool. This reviewer would find such an acceptance easier if there were on one hand more reliable communications of the case available and if not-perhaps mainly due to this lack-the presentation were again and again rather forced. The merit to have published a case of necrophilia—not a monograph on necrophilia as the title of the treatise might make one assume-is despite these criticisms gladly conceded.

There are 3 Rorschach protocols—very helpful certainly—exemplarily directed and interpreted by Roland Kuhn.

> Eugen Kahn, Houston, Tex.

PSYCHIATRY AND THE PUBLIC HEALTH. By G. R. Hargreaves. (New York: Oxford Univ. Press, 1958. \$3.00.)

The author has edited his lectures given to the "medical" public for the Health Clark Bequest. This bequest made possible lectureships on the history and progress of Preventive Medicine. Dr. Hargreaves is the first psychiatrist given this honor and his lectures completely justify his selection.

For one unfamiliar in the field of preventive psychiatry these lectures are a must. For those experienced in this field Dr. Hargreaves has brought his freshening insights into the field to help us understand why we are at all concerned about preventing mental illness. Dr. Hargreaves has chosen to start at the beginning and progress to modern times, where we find psychiatry at the threshold of preventing illness and its complications.

Anyone interested in mental illnesses, and physicians who are concerned about the extent of psychiatric disorders in their practices should find in this small volume considerable of interest. Psychiatrists in training would do well to read this book.

The best thing about it is Dr. Hargreave's explanation about how mental illnesses have become a major public health problem and what might be done about this fact.

Roger W. M. Howell, M.D., Detroit, Mich. Patients, Physicians and Illness. Edited by E. Gartley Jaco. (Glencoe, Ill.: The Free Press, 1958, pp. 600. \$10.00.)

This volume is presented as a sourcebook of "behavioral science" in medicine. Most of the 64 contributors, including the editor, are "behavioral scientists," 11 have medical degrees and, of these, 4 are working in or associated with psychiatry. "To the individual who has ever been a patient, or the physician, nurse, medical scientist, or health technician, the contents and orientation of this volume may seem novel, if not unique. As an effort to bring together the writings, research and ideas of representatives of the behavioral sciences on varied aspects of medicine within a single cover, this sourcebook presents a view of medicine not well-known nor often recognized. Because medicine has traditionally had a biological orientation and basis, the entry of the sociologist, cultural anthropologist and social psychologist may seem a strange, if not bold, venture. Indeed, such a view may also feasibly be held by many social scientists. The patient, the physician, and illness itself, however, may be given newer significance and understanding when examined from the perspective of these disciplines becoming known as 'the behavioral sciences.'" This excerpt from the Introduction fairly reveals the general character and theme of the book. Of the 55 chapters the majority have appeared previously in social science, psychological, and similar publications, and at least one in the Journal of American Medical Association. (Be it noted that this volume does not include "Near Life, Near Death, Near God" as published anonymously and given editorial support in the J.A.M.A., 1957, 163: 15, 1358. Nor does anything in the book approach the naive-é of that propaganda to which some medical schools had already succumbed.) The good physician, who, in spite of appearances, must always be acutely conscious of many other deficiencies than this book implies, will find little that is actually novel or unique in it. Indeed, some of the contributors point out that much of what they have to say is self-evident or well known and that some of their views need further evidence to support them. It is suggested that further courses in behavioral sciences should be included in the medical curriculum. But surely such material, if sufficiently established or worthy of investigation, is the type that the student should best learn -along with its limitations as well as the limitations of other material-from a good clinical instructor rather than from formal courses; the good clinical instructor does

recognize that much or most dis-ease is related to heredity and environment in its broadest sense—social milieu, cultural factors, mores, personal associations, circumstances, problems, etc. Better understanding of that relationship, as of all problems of medicine, without any exception, is, cf course, urgently required but the discursiveness of this book—analysis of health, illness, patient, student, physician, nurse, hospital, community, etc.—would seem to militate against that objective rather than advance it.

About 50 pages are devoted to reference matter and bibliography combined and 8 pages to explanation of terms used in the behavioral sciences. There are not many but a few typographical, spelling or grammatical errors, such as cardiac "infection" for infarction, "prosecuted" for persecuted, "sited" for cited, each "have" for each has.

N. E. McKinnon, M.D., University of Toronto.

THE PSYCHOLOGY OF EARLY CHILDHOOD. By Catherine Landreth, Ph.D. (New York: Alfred A. Knopf, 1958, \$8.75 trade—\$6.50 text.)

This book is a survey of present-day knowledge concerning the development of child behavior to the age of 6 years, written in a form which makes it suitable for use as an introductory college textbook on the subject. The author, who is Professor of Child Psychology and Director of the Institute of Child Welfare Nursery School of the University of California in Berkeley, has drawn upon her experience and perspective both as investigator and teacher in the field of child development to present in a clear and interesting way basic psychological concepts which are needed in the educational background of such professional disciplines as nursery school and kindergarten teaching, clinical psychology, family and child social welfare work, nursing, pediatrics, and child psychiatry.

Oriented toward the results of research, the text gives representative experimental data on which generalizations in child psychology have been made, drawing, to some extent, from the pediatric and psychiatric as well as, more extensively, from the psychological literature. Conclusions drawn are commonsense and, although areas for needed research are indicated, there is a minimum of theorizing and speculation to fill the many large gaps in current knowledge.

The subject matter is clearly outlined. Each chapter begins with a few questions designed to stimulate the student's selective interest and

ends with a brief review of the salient conclusions. The text is well supplemented with figures (105), tables (17), and brief illustrative examples. At the end of each chapter, also, are a small number of carefully selected recommended readings, often some recommended films, and usually about 2 to 4 pages of references.

Beginning with a brief review of "The Origins of Child Psychology," the body of the material is organized under the following chapter headings: "Prenatal Origins of Behavior," "Behavior of the Newborn," "Motor Behavior," "The Development of Language and the Function of Speech in Early Childhood," "Emotional Behavior," "Social Behavior Toward Age Peers," "Perceptual and Adaptive Behavior," "Developmental Factors," "Learning Processes," "Mental Functioning," and "The Child's Interaction with his Environment." The book ends with a discussion of the "Problems Inherent in the Study of Human Behavior," mentioning the restrictions involved in the use of the experimental method in the study of human subjects, suggesting the kind of data that can be obtained on child development and behavior as a natural science, and indicating the immensity of the task ahead in the development of the field and the need for a multidiscipline approach.

Although the generalizations in child psychology contained in this book are applicable to the understanding and regulation of the development of the individual child, their use in the diagnosis, prognosis, and treatment of behavior disorders is outside of the scope of the material presented. The book is concerned, largely, with normal development rather than with clinical problems, although the "normal" includes a wide range of deviations. Psychoanalytically oriented child guidance personnel will find much of the theory on which their dynamic formulations and treatment are based either only briefly mentioned or, in some instances, rejected as unsupported by rigorously obtained statistical data. There has been no attempt in this book to fit the various aspects of child development into any onetheory structure or into an integrated system of concepts.

It is the reviewer's opinion that not only will teachers and other professional workers responsible for the care of young children find this book a good introduction to the psychology of early child development and a useful reference resource, but also that nurses, medical students, and physicians who are not well grounded but are interested in the growing-literature in the field will find it interesting

and profitable reading. The vocabulary and style are not at all formidably technical, but the scientific standards maintained in the selection of material in a relatively recent, complex, controversial, and burgeoning field of knowledge have been high.

HALE F. SHIRLEY, M.D., San Francisco, Calif.

THE PSYCHOLOGY OF MEDICAL PRACTICE. By Marc H. Hollender, M.D. (Philadelphia and London: W. B. Saunders Company, 1958, pp. 276.)

Contributions by a psychiatrist, an obstetrician, a pediatrician, and an internist are included in this monograph. There are two chapters on the doctor-patient relationship which unfortunately begin with a categorization of this relationship into 3 types; and many physicians, only barely initiated dynamically, may not find the terms "activity-passivity," "guidance-cooperation," and "mutual participation" too meaningful. The author adds that there is no one particular type of relationship that is best, but the model chosen should be most appropriate to the given situation.

The second chapter on the practical aspects of this relationship between doctor and patient makes a number of points which bear close reading, such as: the need to understand the purpose, function, and the fears that provoke reactions to an illness, and how unserviceable the concept of "good" and "bad" is when applied to such reactions. Also covered are the shortcomings of a "normal" and an "abnormal" in evaluating behavior, and the error of too great stress on whether a pain is "real" or "unreal." In discussing the motivation of a patient's visit, the author points out that in many cases "... the 'real reason' will be revealed only as the patient gets to know you and is sure your attitude is sympathetic."

The section dealing with the cancer patient stresses the need to individualize one's approach to the patient, and the benefit of being told the diagnosis by a physician known to the patient rather than by a comparative stranger. A quotation from an article by C. S. Cameron on the management of the terminal patient certainly merits attention.

Several discussions in the chapter on obstetrics (by E. M. Solomon, M.D.) make excellent and informative reading for psychiatrists, for instance: "Clinical experience amply attests to Reynold's statement that women do not necessarily like to be pregnant and often deeply resent pregnancy" but adjust to it as the condition continues; and the patient not infrequently tells the obstetrician she is op-

posed to breast feeding, and a strong aversion or revulsion against the process may exist. The approach to natural childbirth and keeping the baby with the mother continuously after the first 24 hours are refreshingly practical, since it is pointed out that both approaches are excellent for some patients but not indicated for others.

The section on pediatrics (by J. B. Richmond, M.D.) is equally well written. The value to the physician of seeing the family in a more spontaneous situation during a house call, the value of listening, and a thorough examination in relieving anxiety, and the need to avoid glib reassurance are stressed. He points out that troublesome areas may not be mentioned and that the mother's real feelings may not be in keeping with what is at first expressed. Finally, the problems faced by a parent whose child has a malignancy are described and realistic suggestions are offered.

There is also a chapter on the medical patient, in which coronary heart disease, diabetes mellitus, and cerebrovascular accidents are considered.

The careful reading of this material would certainly aid one in understanding the patient's emotional difficulties. There are also some practical and understandable suggestions on approaching the patient which would be of great value to the non-psychiatric physician.

JACKSON A. SMITH, M.D., University of Nebraska, Omaha, Nebr.

THE FEMALE OFFENDER. By Prof. Caesar Lombroso and William Ferrero. (New York: Philosophical Library, Inc., 1958, pp. 313. \$4.75.)

Caesar Lombroso, one of the greats of 19th century psychiatry and psychology, directed much attention to the study of the criminally deranged. However, viewed in light of 20th century understanding, some of his concepts in *The Female Offender* are most inadequate. These include such items as the born criminal, atavism and physiological anomalies, to mention only a few. Nevertheless, Lombroso's speculations found him pleading for a clearer differentiation between the casual and the habitual offender. He also helped inspire a more careful scrutiny of statistics in crime.

Dr. Pirone in the Introduction has written as follows: The present study in criminal biology, which grew out of his collaboration with William Ferrero (although almost a hundred years ago) should be particularly welcome to counterbalance the mainly ana-



lytical and psychologically dynamic hypotheses of today.

This reviewer believes such "counterbalancing" is primarily of value in terms of historical perspective and does not scientifically negate "analytical and psychologically dynamic hypotheses of today." Keeping this in mind, The Female Offender is a worthwhile addition to all social science libraries.

ARTHUR LERNER, Ph.D., Los Angeles City College

ELECTRONIC INSTRUMENTATION FOR THE BE-HAVIORAL SCIENCES. By C. C. Brown, Ph.D. and R. T. Saucer, Ph.D. (Springfield: C. C Thomas, 1958. \$5.50.)

A product of psychophysiologic experience, this small volume is a clearly written digest of an elimentary course in electrical theory and application. It is addressed to the sophisticated amateur. The text includes simplified explanations of recent technical advances as transducers and transistors, as well as circuits for basic instrumentation. Diagrams, appendices, and table of contents are satisfactory. A helpful guide in the initial development of an electronic-behavioral laboratory.

MAX FINK, M.D., Glen Oaks, L. I., N. Y.

PSYCHOTHERAPY OF CHRONIC SCHIZOPHRENIC PATIENTS. Edited by Carl A. Whitaker. (Boston: Little, Brown and Co., 1958, pp. 219. \$5.00.)

The prospect of reviewing a 3-day conference, which often extended into the wee hours of the morning, might in itself be overwhelming if it were not for the inherent promise of help and encouragement in the treatment of chronic schizophrenics. The report of the conference of October 1957 is made up of a review of the 8 sessions and a summary. Each session is moderated by one of the participants. The most unusual feature of the book is its informality. Eight experts in the field of psychotherapy, 7 cf whom were practicing psychiatrists and one an anthropologist, were encouraged to discuss in a matter-of-fact way their views on this subject. The interchange was recorded and later reviewed by each contributor, so that spontaneity is preserved.

The first chapter, Diagnosis and Prognosis, moderated by Malcolm L. Hayward of Philadelphia, begins with the happy approach of using treatability as an operational diagnosis. Though Hayward is worried lest the reader find this chapter confused and disorganized, the sophisticated student will have more of a

feeling of amused toleration and a realization that others, like himself, are overwhelmed by the complexities of this disease. On the basis of the abilities of the therapist, at least a grouping of schizophrenia is deemed possible.

The next chapter, Schizophrenic Distortions of Communication, moderated by Gregory Bateson, is a record of a lively interchange on the patterning of schizophrenia. It ends with a delightful illustration of the schizophrenic mother and her effect upon others in her environment. It also points up the argument about whether schizophrenia is an illness or a learned way of functioning. The mother had more of an effect on the narrator of the story than he realized.

In the chapter on Orality, moderated by Carl Whitaker, the group is unable to define oral deprivation. In any case, Whitaker believes that schizophrenia is more complex than oral deprivation. He postulates 3 possible factors in the etiology of this disease: (a) deprivation of closeness; (b) a noxious ingredient; (c) a lack of remedial life experience. All participants agree that the therapeutic processes involved do not lend themselves to "simple technical rules."

Anality is moderated by John Warkentin, who opens with the psychotherapeutic truism that "replacement therapy" is not enough. Also, that both in the etiology and treatment of schizophrenia major factors become operative after the oral period of psychosexual development. In this section the preoccupation with the schizophrenogenic mother is abandoned. The aspects of anality-control, guilt and aggression raise the image of the father. Warkentin says that it is all right to let the patient "win" when the therapist is paternal, but that he should not be allowed to win when the therapist is "maternal." Allowing the patient to win when the therapist is maternal may even increase the risk of suicide. Does indifference in the therapist express accumulated deep anger and isn't it expressed exactly the same way as indifference in the schizophrenic patient? The etiology of schizophrenia then does not only depend on the failure of feeding by the mother, but also on the failure of the father to assume his masculine control. The therapist must first establish a firm masculine contact to overcome the patient's stubbornness. The patient then regresses to an oral level where he can accept the therapist's maternal function. There are advantages of multiple therapy and group therapy in this connection. Also, flatness and indifference on the part of o either the patient or the therapist represents an impasse in treatment.

Family and Sexuality is moderated by Don Jackson. Malone makes a statement that the amount of milk varies with the extent and openness with which the male expresses his love for the female which, if substantiated, would be the real proof that the father plays a leading role in the production of schizophrenia. All agree that the success of therapy of schizophrenia usually requires that the therapist be family-oriented rather than patient-oriented. If the patient is living with his parents, it usually will be necessary to include them in some form of psychotherapy.

Counter-transference is moderated by Thomas P. Malone. "The kind of person who psychologically treats schizophrenia is apt to be the kind of person who has available the kind of feelings that are apt to make the patient accept these feelings as being true; second, the intensity of the patient's need for such feelings and juxtaposition of these two things creates the phenomenon." Growth, or possibly a change in the personality of the therapist, occurs in the treatment of schizophrenic patients. The therapist tends to grow in areas parallel to those in which the patient grows.

The chapter on Management of the Patient is moderated by John N. Rosen. He is opposed to hospital treatment "currently" because they cannot offer the patients the enormous amount of individual therapy they require. Also, in hospitals there are antagonisms, hostilities and jealousies that make friction and intolerance. This interferes with the individual attention to the patient.

Family Management is moderated by Edward Taylor, who points out that all mental illness develops in a family and is present in several members of the family. The participants agree that to treat a psychotic patient one must also treat his reactions to members of his family and forces within the family that produce the psychosis. The corrective forces that they recommend are as follows: 1. Provide maximum freedom for the patient, psychologically. 2. Provide maximum security for his physical care. 3. Provide maximum honesty and predictability in the patient's. treatment world, that is, protecting him from counter-transference with people working around him which might make him feel confused and betrayed in this world.

The emotional climate of tolerance, which is so necessary for the patient to be able to experience his own anxiety and anger, is well illustrated by these sessions where 6 of our colleagues met in mutual tolerance and frankness. While some may be puzzled by this approach, it was very helpful to me. It stimu-

:

lated my therapeutic efforts in both individual and group treatment. It has been an aid in teaching and supervision. Congratulations to the editor and his co-authors!

> Donald A. Shaskan, M.D., Veterans Administration, San Francisco, Calif.

Economics of Mental Illness. By Rashi Fein, Ph.D. (New York: Basic Books, Inc., 1958, pp. 164. \$3.00.)

This is the second report of the Joint Commission on Mental Illness and Health. In it Dr. Fein, an economist, estimates as accurately as available data allow, the total annual cost of mental illness in the United States. The total cost is calculated by the addition of two factors, the *direct* and *indirect* costs. The direct costs are the actual public and private expenditures for the care of the mentally ill plus the cost of scientific research in this field. The indirect costs include the hidden expenses of mental illness, the lost production, lost income, and loss of future earnings.

Unfortunately the validity and pertinence of the data used in this task vary enormously. No one "typical" year can be selected because important data are not equally available for every year. Hence information is culled from sources ranging in dates from 1949 to 1957. During even this relatively short span it is certain that costs of care have gone up and that prognostic outlook for patients under meatment has changed. Inevitably too, in arriving at the best guess of total costs certain very accurate and precise figures must be added to those for which the accuracy is very doubtful.

In spite of these difficulties, which of course are freely admitted, Dr. Fein is able to estimate that as a basic minimum, the United States is spending 1.7 billion dollars a year in direct costs and .7 billion in indirect costs. And this does not include the cost of treatment of mentally ill patients by general practitioners and internists. If this and certain other omitted categories were included the total estimate would certainly amount to more than 3 billion a year.

The value of this study lies in the clear analysis of the methods of computing from inadequate data a figure which has some significance relative to other major public and private expenditures—education for example, or alcoholic beverages. Dr. Fein points out that in the last analysis the public must decide what it will spend money on. Obviously it cannot afford to buy everything it wants. The decision as to whether a large part of the national income will be spent on mental ill-

ness and health or on alcohol or motor cars is a matter of public values. The nation can afford to spend more on mental illness if it spends less on something else. The investment of more money in direct costs may reduce the indirect costs to the point where the total bill is reduced.

Suggestions as to what should be done in order to make an accurate accounting of the costs of mental illness possible are included in the study.

For those interested in the statistical dimensions of mental illness, this is an excellent report and a valuable reference.

> J. D. Griffin, M.D., General Director, Canadian Mental Health Association.

A TEXTBOOK IN RORSCHACH TEST DIAGNOSIS. By Ewald Bohm, Ph.D. Translated by Anne G. Beck, M.A. and Samuel J. Beck, Ph.D. (New York: Grune and Stratton, 1958, pp. 322, \$7.75.)

Doctor Bohm, a keen exponent of the Rorschach as a clinical tool, gives us a complete description of present European principles and practices as regards this instrument.

Students will welcome the reformulation of principles of personality vital toward understanding the rationale of the Rorschach. This is done with regard to types of personality in relation to clinical pictures. There is also a refreshing exposition on the meaning of separate variables, more fully than this reviewer has hitherto seen in the English literature.

The Becks have done an excellent job in translating this volume from the German. Readers will also profit from the various interpretative leads, points of departure for research and coverage of the literature.

ARTHUR LERNER, Ph.D., Psychology Department, Los Angeles City College.

HEREDITY COUNSELING. Edited by Helen G. Hammons. (New York: Paul B. Hoeber, Inc., 1959, pp. 112. \$4.00)

In the whole of the United States there are only about 20 institutions to which the individual in search of genetic counseling can go for advice. The truth is that everyone contemplating marriage and the raising of a family requires some help in resolving questions of heriditary transmission, for human beings are the carriers of many deleterious genes, and

the "normal" fitness of a population is simply, as Dobzhansky and Wallace have pointed out, an average expression of a multitude of genotypes all riddled with deleterious recessive genes.

If the fitness of human beings is to be improved, some attention should be given to the problems which are likely to arise in a system characterized by random mating such as ours. Philosophers are not yet kings, and even geneticists don't know a large number of the answers to the questions they are asked, but one thing is certain, and that is, that many tragedies could have been avoided for countless numbers of human beings, had heredity counseling been available to them.

In the present small volume, 17 experts with experience in heredity counseling pool their knowledge, and underscore the importance of an area of theory and practice which sorely needs development. The volume, which is issued under the auspices of the American Eugenics Society, contains several original contributions, in addition to the more general discussion of the structure and functions of a heredity counseling service.

Ashley Montagu, Ph.D., Princeton, N. J.

CLINICAL NEUROANATOMY, NEUROPHYSIOLOGY AND NEUROLOGY. With a Method of Brain Reconstruction. By Louis Hausman. (Springfield, Ill.: Charles C Thomas, 1958. \$9.75.)

This work represents a concise, integrated and comprehensive approach to clinical neuroanatomy, neurophysiology and neurology. Based upon amplification of the method of teaching originally described by Adolf Meyer, it combines the study and simultaneous reconstruction of a three dimensional model of the nervous system. The text is illustrated by plates and tables and is to be employed in conjunction with the author's Atlases 1 and 2 published by Charles C Thomas. The material presented has been used for many years at Cornell University Medical College and New York University Medical College. The author's efforts to integrate basic science with clinical application have been successful. The type is clear, the style lucid and the presentation logical. This book should be useful to teachers and students of neurology, neuroanatomy, and neurophysiology.

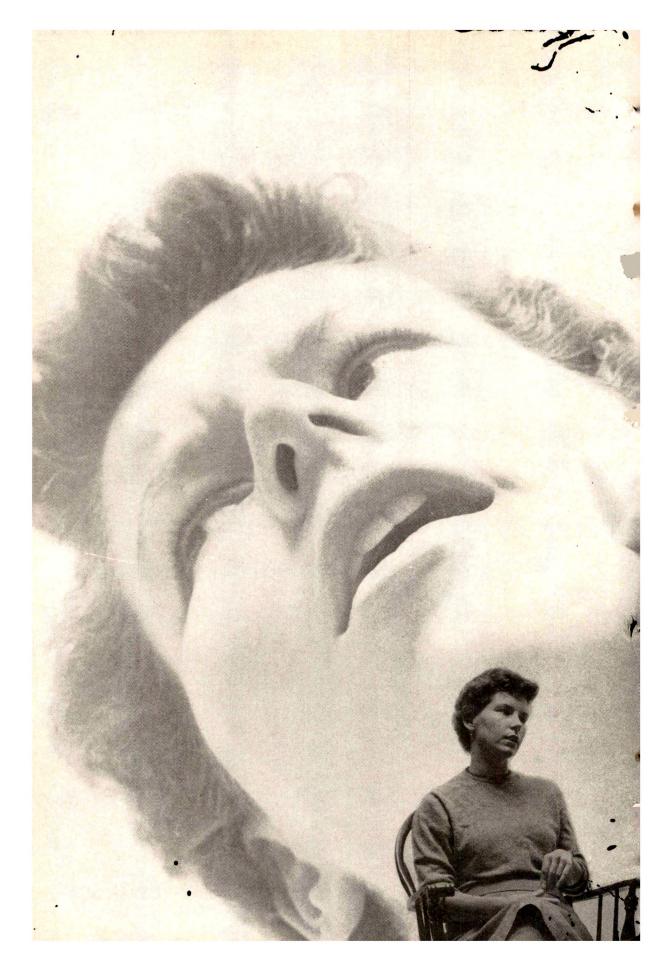
> JOHN B. DOYLE, M.D., Los Angeles, Calif.

## To-control agitation—a symptom that cuts across diagnostic categories



## Thorazine<sup>®</sup>, a fundamental drug in

**psychiatry**—Because of its sedative effect, 'Thorazine' is especially useful in controlling hyperactivity, irritability and hostility. And because 'Thorazine' calms without clouding consciousness, the patient on 'Thorazine' usually becomes more sociable and more receptive to psychotherapy.



controls

the acute
psychotic episode

elicits continuing cooperation

promotes accessibility

LITERATURE SUPPLIED ON REQUEST

## Sparine

HYDROCHLORIDE

Promazine Hydrochloride, Wyeth
INJECTION TABLETS SYRUP

References: 1. Frain, M.K.: J, Nerv. & Ment. Dis. 125:529 (Oct.-Dec.) 1957. 2. Graffeo, A.J.: New York State J. Med. 58:2056 (June 15) 1959. 3. Lesse, S.: Am. J. Psychiat. 113:984 (May) 1957.

Wyeth Laboratories, Philadelphia 1, Pa.



A Century of Service to Medicine

#### An Interdisciplinary Approach

## **ALCOHOLISM**

Proceedings of the First Annual Conference
on Community Mental Health
Social Science Institute
Washington University

- For academic personnel interested in research on alcohol and behavior
- For applied and lay people interested in the problems of alcohol and alcoholism

The FIRST and ONLY work in the field to provide a current summary of the status of research in alcoholism from the perspectives of psychiatry, psychology, sociology, and physiology.

This was the first annual conference on a frontier area in community mental health sponsored by the Social Science Institute of Washington University. The book itself, an outgrowth of the conference, was conceived to serve at least two purposes:

- 1. It is a statement of the present status of knowledge about the forces involved in the appearance and course of alcoholism in people who live in communities.
- 2. It is a platform from which the research scientist can launch further investigation of this phenomenon.

The first section contains five original papers by noted researchers in the field of alcohol studies. In the second section are five original papers prepared by interdisciplinary teams and developing new perspectives in alcoholism research.

Publication date November 1959 \$3.75

114 pages

#### DAVID J. PITTMAN, Ph.D.,

Editor

Research Assistant-Professor
Departments of Psychiatry and
Sociology
Research Associate, Social Science
Institute
Washington University

#### EDITORIAL ADVISORY BOARD

John C. Glidewell Mildred B. Kantor James M. Vanderplas Albert F. Wessen George Winokur

With a Foreword by JOHN C. GLIDEWELL, Ph.D. Washington University

## SIXTEEN DISTINGUISHED CONTRIBUTORS

John W. Chotlos John B. Deiter Ebbe C. Hoff Richard De Charms Edwin F. Gildea Raymond Hunt Mildred B. Kantor Eli Robins David J. Pittman Jackson A. Smith Charles R. Snyder George Ulett James M. Vanderplas Albert F. Wessen Walter L. Wilkins George Winokur

## COMPREHENSIVE, THREE-LEVEL TREATMENT OF DEPRESSION

AND ASSOCIATED ANXIETY
AND PHYSICAL TENSION

#### RELIEVES DEPRESSION

including symptoms such as crying, lethargy, loss of appetite, insomnia

RELIEVES ASSOCIATED ANXIETY with no risk of drug-induced depression

RELIEVES ASSOCIATED PHYSICAL TENSION

by relaxing skeletal muscle

hypothalamus

2 nalamus

thalamus and limbic system

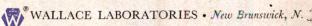
spinal cord

## 'Deprol'

benactyzine + meprobamate

- confirmed efficacy
- documented safety

SUPPLIED: Bottles of 50 light-pink, scored tablets
COMPOSITION: Each tablet contains 1 mg. benactyzine He
and 400 mg. meprobamate



TTRADE, MAR

CD-92



### in all forms of parkinsonism

• a single bedtime dose permits restful sleep... • prevents morning rigidity... • "is often sufficient to control symptoms for 24 hours"<sup>2</sup>

COGENTIN "will counteract rigidity, contractures, frozen states and muscle cramps better than any current preparation" without drowsiness or fogginess, and even control major tremors unrelieved by other medications. Cogentin usually permits continuation of full-strength tranquilizer therapy if parkinsonian symptoms develop. And Cogentin has not shown cumulative toxicity. No serious reactions have been reported even after treatment lasting as long as four years.

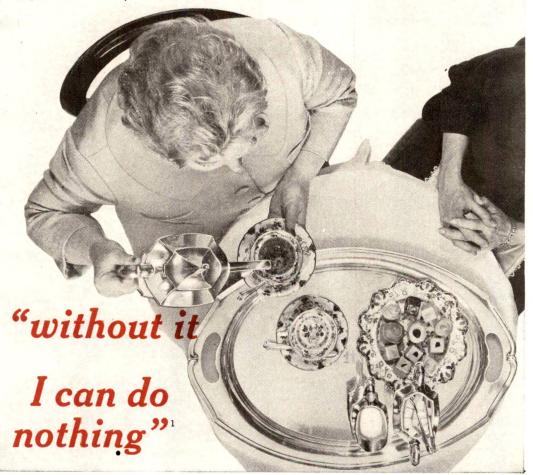
References: 1. Doshay, L. J.; Constable, K., and Zier, A.: Neurology 3:360, 1953. 2. A.M.A. Council on Drugs: New and Nonofficial Drugs, Philadelphia, J. B. Lippincott, p. 242, 1958. 3. Brock, S., Mod.: Bull. New York Acad. Med. 32:202, 1956. 4. Doshay, L. J.: Parkinsonism and Its Treatment, Philadelphia, J. B. Lippincott, pp. 87-88, 1954. 5. Doshay, L. J.: J.A.M.A. 162:1031, 1956.

**Dosage and Administration:** Recommended dosage is one-half to one tablet two or three times a day. If higher doses are required, the patient should be closely observed and dosage adjusted as indicated. A decrease in dosage is rarely necessary. Additional information on Cogentin is available to physicians on request.

Supplied: As a 2 mg. quarterscored tablet in bottles of 100 and 1000.

COGENTIN is a trademark of Merck & Co., Inc.

Merck Sharp & Dohme division of Merck & co., Inc., PHILADELPHIA 1, PA.

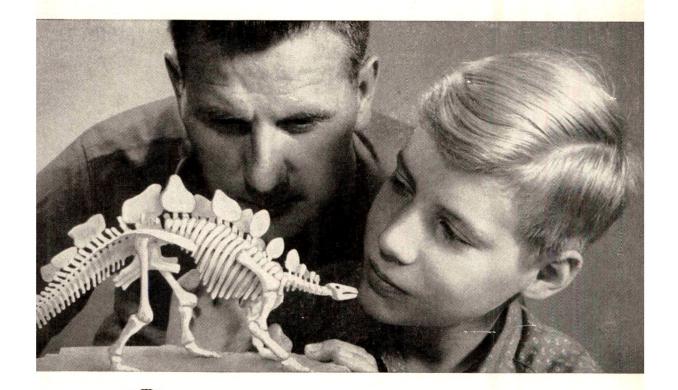


o facilitate psychotherapy in the emotionally disturbed child, and to enable him to lead a stable life during such therapy, adjunctive treatment with Prozine is often advantageous. In reporting on 176 disturbed children who received Prozine, Ehrmantraut et al. found that 85.8 per cent showed moderate to marked improvement in behavior reactions and adjustment to institutional care.

Prozine, designed for the treatment of moderate to severe emotional disturbances, helps control psychomotor agitation as well as anxiety and tension.

1. Ehrmantraut, W., et al.: Scientific Exhibit Presented at the District of Columbia Medical Society Meeting, Nov. 24, 1958, Washington, D.C.

## controlled: an acute behavioral problem





SPECIFIC CONTROL THROUGH DUAL ACTION



90% of anxious, agitated and apathetic office patients calmed without drowsiness and with normal drive restored...

on one or two 0.25 mg. tablets b.i.d.:

This is the pattern of performance for

## PERMITIL

Fluphenazine dihydrochloride

#### In Anxiety and Anxiety-induced Depression

"In contrast to other phenothiazines, it [PERMITIL] mitigates apathy, indifference, inertia and anxiety-induced fatigue. Thus, instead of impeding effective performance of daily tasks, it increases efficiency by facilitating psychic relaxation. Consequently, acceptance of this drug, especially by office patients, has been excellent."

- In 608 patients with anxiety and anxiety-induced fatigue or depression, Permitil, administered in small daily doses of 0.5 mg. to 1 mg., produced significant improvement in 90%.
- Permitil is virtually free from side effects at recommended dosage levels.
- Patients become calm without being drowsy and normal drive is restored.
- Onset of action is rapid; effect is prolonged.
- Permittle does not potentiate barbiturates or non-barbiturate sedatives and can be used with impunity with such agents.

How to prescribe Permitil: The lowest dose of Permitil that will produce the desired clinical effect should be used. The recommended dose for most adults is one 0.25 mg. tablet twice a day (taken morning and afternoon). Increase to two 0.25 mg. tablets twice a day if required. Total daily dosage in excess of 1 mg. should be employed only in patients with relatively severe symptoms which are uncontrolled at lower dosage. In such patients, the total daily dose may be increased to a maximum of 2 mg., given in divided amounts. Complete information concerning the use of Permitil is available on request.

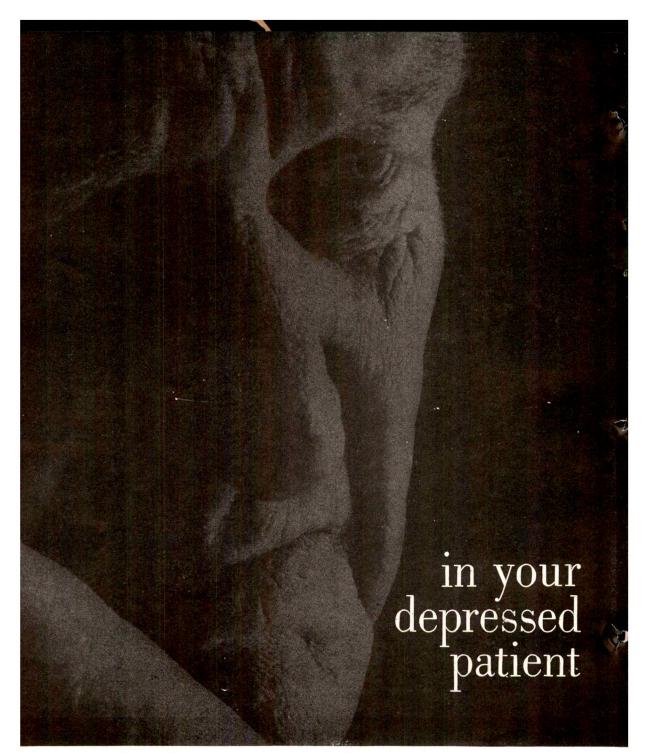
SUPPLIED: Tablets, 0.25 mg., bottles of 50 and 500.

REFERENCES: 1. Ayd, F. J., Jr.: Current Therapeutic Research 1:41 (Oct.) 1959.

2. Recent compilation of case reports received by the Medical Department, White Laboratories, Inc.



# PERMITIL



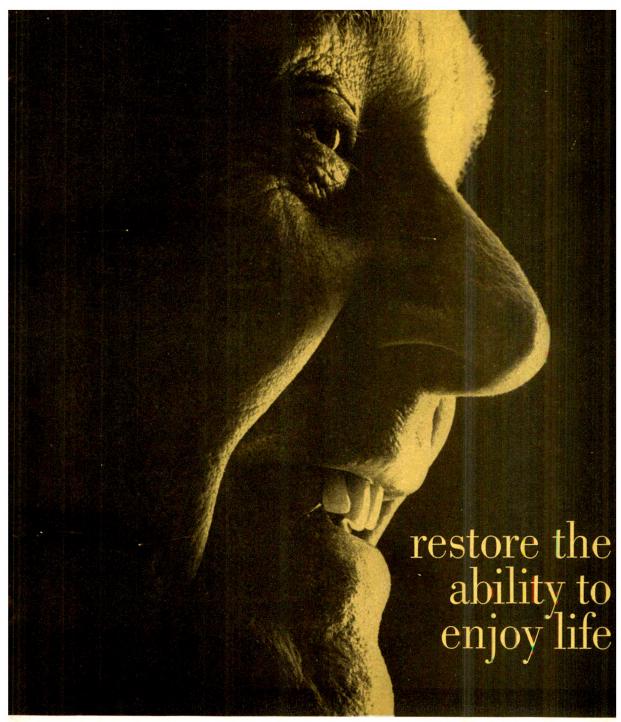
# emove the depression with new a true antidepressant

brand of phenelzina dihydrogen sulfate

pidly effective—antidepressant response ten within a few days; complete remission sually within 2 to 6 weeks, in 4 out of 5 tients.<sup>1-10</sup>

w toxicity-no significant reports of tox-

corrective—helps remove the depression, rather than merely masking the symptoms... restores the mild-to-deeply depressed patient without institutionalization and without recourse to ECT in most cases.<sup>1-10</sup>



INDICATIONS: Mild to severe depressions, depressions associated with chronic diseases such as angina pectoris and rheumatoid arthritis. Improves the depressed phase of affective (manic-depressive) psychosis, and relieves the depression of catatonic schizophrenics, although not affecting the psychosis per se. SIDE EFFECTS: Occasional postural hypotension and infrequent nausea, ankle edema, delayed micturition or constipation are managed by appropriate adjunctive therapy, or dosage reduction. DOSAGE: One tablet three times a day. After remission, reduce to a maintenance level of 1 or 2 tablets a day. SUPPLIED: Orange-coated tablets, each containing 15 mg. of phenylethylhydrazine pres-

ent as the dihydrogen sulfate. Bottles of 100. CAUTION: Nardil should be withheld or used with extreme caution where the patient has a history of liver disease or liver damage is present. Hypotensive patients should be under close medical supervision.

REFERENCES: 1. Sainz, A.: Ann. New York Acad. Sc. 80:780, Art. 3 (Sept. 17) 1959. 2. Thal, N.: Dis. Nerv. System 20:197 (May, Pt. 1) 1959.

3. Saunders, J. C., Kline, N. S., et al.: Am. J. Psychiat. 116:71, 1959. 4. Arnow, L. E.: Clinical Med. 6:1573, 1959. 5. Dickel, H. A., et al.: Clinical Med. 6:1579, 1959. 6. Dunlop, E.: Rhode Island M. J. 42 656, 1959.
 Sainz, A.: Dis. Nerv. System 20:537, 1959. 8. Sarwer-Foner, G. J., et al.: Canad. M.A.J. (in press) 1959. 9. Hobbs, L. F.: West Virginia M. J. (in press) 1959. 10. Dunlop, E.: Dis. Nerv. System (in press) 1959. MOFRIS PLAINS,



## Stelazine<sup>®</sup>

brand of trifluoperazine

## to help you reach the chronic psychotic

Because of its clinically demonstrated effectiveness in the treatment of chronic psychotics, 'Stelazine' therapy should be tried for such patients, no matter how discouraging the results of previous therapies may have been.

#### an awakening effect

Allen¹ reports that 'Stelazine' had an awakening effect on chronic patients "who had previously been lacking ambition, initiative, or interest in their surroundings."

## delusional and hallucinatory trends alleviated

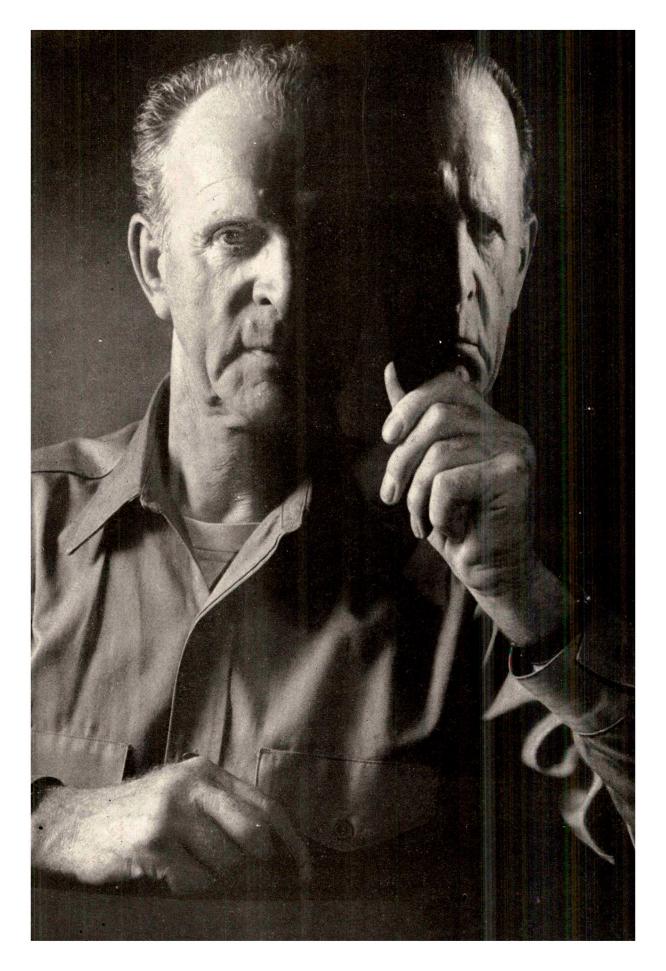
'Stelazine' also "alleviated delusional and hallucinatory trends and facilitated communication and psychotherapy.... To appreciate the significance of this progress, it must be remembered that these patients had spent years on closed wards, beyond the reach of any available form of therapy."

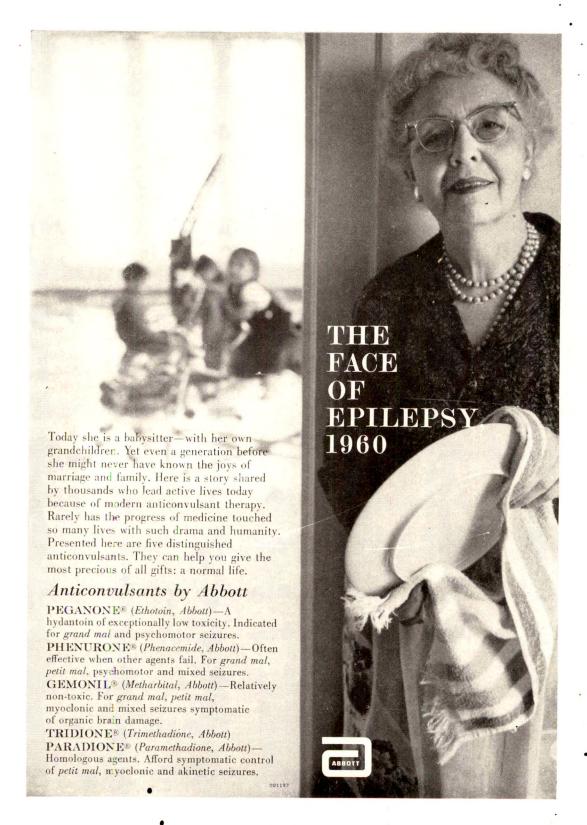
1. Allen, V. S.: Trifluoperazine in the Treatment of Drug-Resistant Schizophrenics, J. Clin. & Exper. Psychopath. 20:247 (Sept.) 1959.



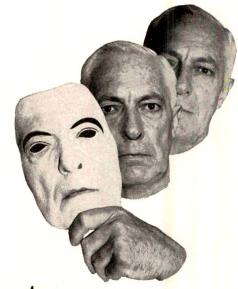
leaders in psychopharmaceutical research







New agent for parkinsonism



# Akineton®

brand of biperiden



### PARKINSON'S DISEASE

postencephalitic — idiopathic — arteriosclerotic

## DRUG-INDUCED EXTRAPYRAMIDAL DISORDERS

parkinsonism — dyskinesia — akathisia

## MUSCULAR SPASTICITY NOT RELATED TO PARKINSONISM

ACTION

Frequently diminshes akinesia, rigidity, and tremor with subsequent improvement in coordinated movement, gait, and posture. Masklike face disappears. Salivation and oily skin are decreased. Oculogyric crises are often lessened in intensity and frequency.

SIDE EFFECTS

Minimum (mainly dry mouth or blurred vision).

DOSAGE

Individual adjustment of dosage is necessary in all instances. Dose range extends from 2 mg. to 24 mg. daily, in divided doses.

AVAILABLE

Supplied as the hydrochloride salt, 2 mg. bisected tablets, bottles of 100 and 1000.

Complete information furnished upon request.

KNOLL PHARMACEUTICAL COMPANY • O R A N G E NEW JERSEY

(formerly Bilhuber-Knoll Corp.)



LIFT THE DEPRESSION

Lift the depression with Marplan. Therapeutically, Marplan is a new, more active amine oxidase regulator. Clinically, it is safer. Medically, it represents a major breakthrough in the chemotherapy of depression. Marplan has been evaluated by some 300 investigators who reported its use in more than 4000 patients. Results have been impressive—frequently dramatic, and side effects have been markedly fewer and less severe. Indications range from moderate to severe psychiatric disorders with associated symptoms of depression, withdrawal or regression. Marplan is also valuable as an adjunct in psychotherapy to facilitate the patient's responsiveness. Complete literature giving dosage, side effects and precautions is available upon request and should be consulted before prescribing.

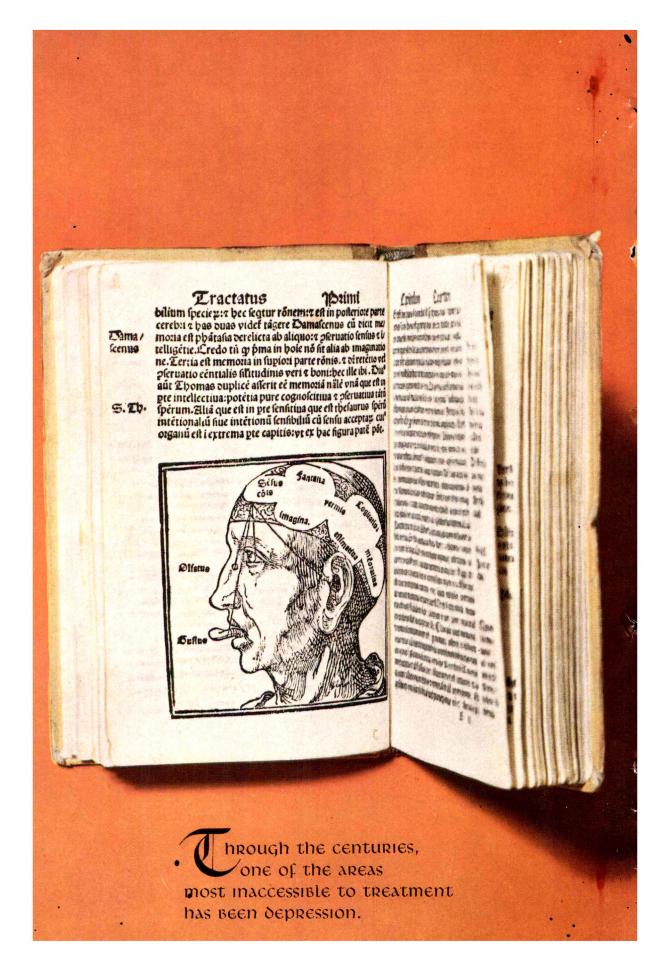
Supplied: 10-mg tablets in bottles of 100 and 1000.

Bibliography: 1. H. F. Darling, W. Kruse, G. F. Hess and M. G. Hoermann, Dis. Nerv. System, 20:269, 1959. 2. W. B. Abrams, A. Bernstein, V. D. Mattia, Jr., R. J. Floody and L. O. Randall, Scientific Exhibit, American Medical Association Meeting, Atlantic City, N. J., June 8-12, 1959. 3. Reports on file in the Department of Pharmacology, Roche Laboratories. 4. Clinical reports on file, Roche Laboratories. 5. L. O. Randall and R. E. Bagdon, Dis. Nerv. System, 19:539, 1958. 6. W. Hollander and R. W. Wilkinson, in J. H. Moyer, Ed., Hypertension, Philadelphia, W. B. Saunders Co., 1959, p. 399. 7. R. W. Oblath, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 8. I. Kimbell, paper read at Cooperative Chemotherapy Studies in Psychiatry, 4th Annual Research Conference, Memphis, Tenn., May 20-22, 1959. 9. L. Alexander and S. R. Lipsett, Dis. Nerv. System, 20 (Suppl.):26, 1959. 10. A. L. Scherbel and J. W. Harrison, Ann. New York Acad. Sc., 80:(3), 820, Sept. 17, 1959. 11. S. L. Cole, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 12. L. O. Randall and R. E. Bagdon, Second Marsilid Symposium, Chicago, Ill., May 8, 1958. 13. O. Resnick, Ann. New York Acad. Sc., 80:(3), 726, Sept. 17, 1959. 14. G. Zbinden and A. Studer, ibid., p. 873. 15. T. R. Robie, Dis. Nerv. System, 20:182, 1959.

MARPLAN 1.M.-1-benzyl-2-(5-methyl-3-isoxazolylcarbonyl)hydrazine

ROCHE®





## For the modern treatment of depression A new drug from Pfizer research



When NIAMID is used as an adjunct to psychiatric procedures, patients become more accessible and more manageable.

- Clinically effective in a broad range of depressive syndromes including: involutional melancholia, reactive depression, depressive stage of manic depressive or schizophrenic reaction, senile or arteriosclerotic depression, postpartum depression.
- Frequently effective in regressed patients in whom other therapy has failed.
- Favorable behavioral changes reduce the need for electroshock therapy.
- A high degree of safety already proved in several thousand patients—NIAMID has not been reported to cause jaundice, agranulocytosis, Parkinson-like extrapyramidal symptoms or visual disturbances, and hypotensive effects have rarely been noted.
- Side effects are infrequent and mild, and often lessened or eliminated by a reduction in dosage.

**DOSAGE:** Start with 75 mg. daily in single or divided doses, and adjust according to patient response. NIAMID acts slowly, without rapid jarring of physical or mental processes. While some patients respond to NIAMID within a few days, most require at least two weeks before gaining full therapeutic benefit. Other patients may need a longer period of therapy. In chronically depressed or regressed psychotics, prolonged administration of larger doses may be required (as much as 450 mg. daily has been used).

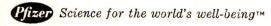
**PRECAUTIONS:** NIAMID has not been reported to cause jaundice; however, in patients with a history of liver disease, the possibility of hepatic reactions should be kept in mind.

SUPPLY: NIAMID is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

## Already clinically proved in several thousand patients-

References: 1. Alexander, L., and Lipsett, S. R.: Dis. Nerv. System 20 (Suppl.):26 (Aug.) 1959. 2. Ayd. F., Jr., Biance, E., and Zullo, L.: Dis. Nerv. System 20 (Suppl.):34 (Aug.) 1959. 3. Ayd. F. J., Jr.: Clinical Medicine 6:1569 (Sept.) 1959. 4. Bloom, B. M., et al.: Presented April 1959 Meeting of the American Chemical Society. 5. Bloom, B. M., et al.: Dis. Nerv. System 20 (Suppl.):10 (Aug.) 1959. 6. Delahunt, C. S.: Presented April 1959 Meeting of the Federation of American Societies for Experimental Biology. 7. Feldman, P. E.: Dis. Nerv. System 20 (Suppl.):41 (Aug.) 1959. 8. Freed, H.: Dis. Nerv. System 20 (Suppl.):42 (Aug.) 1959. 10. Johnson, J. A., Jr.: Dis. Nerv. System 20 (Suppl.):48 (Aug.) 1959. 10. Johnson, J. A., Jr.: Dis. Nerv. System 20 (Suppl.):48 (Aug.) 1959. 12. Mouratof, G. J., Grossman, A. J., and Batterman, R. C.: Dis. Nerv. System 20 (Suppl.):38 (Aug.) 1959. 13. Parker, S.: Dis. Nerv. System 20 (Suppl.):59 (Aug.) 1959. 14. Pfeifer, C.: Dis. Nerv. System 20 (Suppl.):6 (Aug.) 1959. 15. Proctor, R. C.: Dis. Nerv. System 20 (Suppl.):58 (Aug.) 1959. 16. Robie, T. R., Wroblewski, F., and Albano, E.: Dis. Nerv. System 20 (Suppl.):18 (Aug.) 1959. 17. Rowe, R. P., et al.: Proc. Soc. Exper. Biol. & Med., in press. 18. Rowe, R. P.: Dis. Nerv. System 20 (Suppl.):5 (Aug.) 1959. 19. Rowe, R. P., et al.: Fed. Proc. 18:441, 1959. 20. Schneider, J. A., and P'an, S. Y.: Presented June 1959 Meeting of the Society of Biological Psychiatry, Atlantic City, N. J. 21. Shipley, T.: Dis. Nerv. System 20 (Suppl.):5 (Aug.) 1959. 22. Smith, J. A.: Dis. Nerv. System 20 (Suppl.):47 (Aug.) 1959. 23. Udenfriend, S.: Dis. Nerv. System 20 (Suppl.):14 (Aug.) 1959. 24. Vaisberg, M., et al.: Dis. Nerv. System 20 (Suppl.):22 (Aug.) 1959. 25. Wolffe, J. B., and Shuhin, H.: Clinical Medicine 6:1563 (Sept.) 1959.

A Professional Information Booklet giving detailed information on NIAMID is available on request.





Coming in May—a new book which provides a systematic framework for the analysis and better understanding of language and the higher mental processes in general

## LEARNING THEORY AND THE SYMBOLIC PROCESSES

By O. Hobart Mowrer, *University of Illinois*. During the past decade, few developments in the behavioral sciences have been so striking and significant as those pertaining to the symbolic processes. This book describes and interprets these developments. The special idea which emerges is that of imagery and, with it, the whole domain of cognitive (symbolic) processes and consciousness. Among the book's special features are:

- Is built upon, and articulates with, a sound and comprehensive system of behavior theory (*Learning Theory and Behavior*).
- Gives an unusually comprehensive account of mediational processes—in relation to so-called latent learning.
- Contains a superior conception of language learning—the autism theory.
- Offers the only extensive account of what may be called sentence psychology.
- Relates the discussion to servo-theory and cybernetics.
- Gives a full discussion of the representational theory of thought. Ready May 1960. Approx. 416 pages. Prob. \$6.95.

Ready next month—the companion volume

## LEARNING THEORY AND BEHAVIOR

By O. Hobart Mowrer. The scientific developments which are antecedent to those delineated in *Learning Theory and the Symbolic Processes* are described in this book. Using a predominately historical and analytical approach, Dr. Mowrer examines both research and conjecture in a broad context and makes use of many new experimental findings not available to earlier system makers. Nevertheless, he draws extensively upon the theories of others, reshaping and reinterpreting them to develop a new, over-all system with greater scope and power than previously achieved. 1960. Approx. 520 pages. Prob. \$5.75.

Check also-

## THE NEUROCHEMISTRY OF NUCLEOTIDES AND AMINO ACIDS

Edited by Roscoe O. Brady and Donald B. Tower, both of the National Institute of Neurological Diseases and Blindness. This volume contains the papers and full discussions of a symposium organized by the Section on Neurochemistry of the American Academy of Neurology under the sponsorship of the Council of the National Institute of Neurological Diseases and Blindness. It was prepared to provide research workers with an accurate and convenient reference to the roles and metabolism of nucleotides and amino acids in the central nervous system, and to acquaint them with problems under investigation and still unsolved. 1960. Approx. 260 pages. Prob. \$9.50.

Send for examination copies.

JOHN WILEY & SONS, Inc.

440 Park Avenue South, New York 16, N. Y.





## on the Gulf of Mexico

## A MODERN HOSPITAL FOR INTENSIVE PSYCHIATRIC TREATMENT

Owned and Operated by The Anclote Manor Foundation—A Non-Profit Organization SAMUEL G. HIBBS, M.D. - PRESIDENT

Dynamically Oriented For: Individual Psychotherapy, Group Psychotherapy, Therapeutic Community, All Somatic Therapies • Large Staff Trained for Team Approach • Supervised Recreational Program

Medical Director Lorant Forizs, M.D.

Clinical Director

Walter H. Wellborn, Jr., M.D.

**Director of Training** 

Peter J. Spoto, M.D.

Samuel G. Hibbs, M.D. Samuel Warson, M.D.

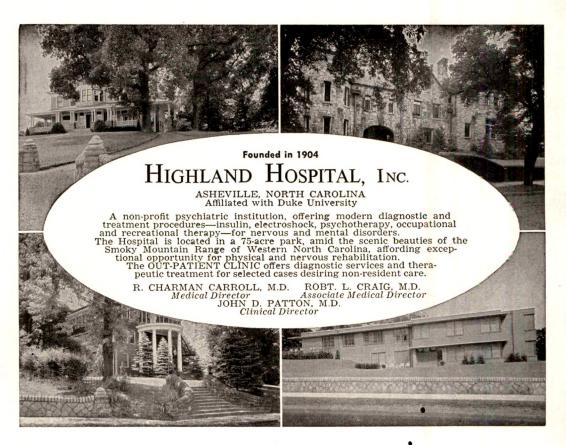
Zack Russ, M.D. Walter Bailey, M.D.

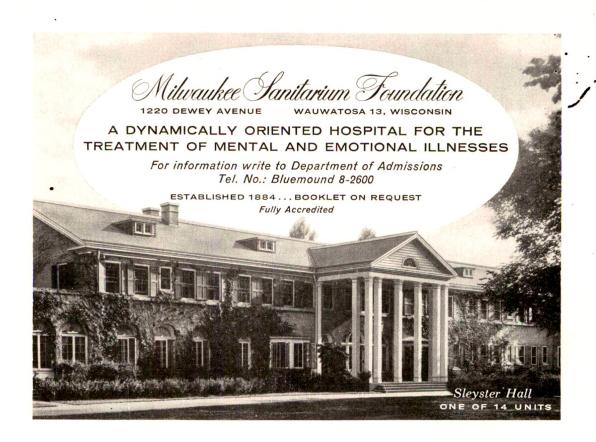
Consultants in Psychiatry Arturo Gonzalez, M.D. Roger E. Phillips, M.D. Melvin Gardner, M.D. Martha McDonald, M.D.

Robert Steele, M.D.

### TARPON SPRINGS, FLORIDA • VICTOR 2-1811

Approved by American Psychiatric Assn., Accredited by Joint Commission on Accreditation of Hospitals Member National Assn. of Private Psychiatric Hospitals, American Hospital Assn., Florida Hospital Assn.





An Integrated Approach to . . .

#### SCHIZOPHRENIA

Edited by ALFRED AUERBACK, University of California School of Medicine

Sponsored by the American Psychiatric Association, this book provides an authoritative survey of recent progress in the understanding and treatment of schizophrenia. Integrates research findings of psychiatrists with those of anthropologists, ethnologists, and sociologists in the fields of communication and intrafamily relationships. Covers latest psychotherapeutic techniques; reviews Russian developments in neurophysiology; outlines current biochemical studies on taraxein; appraises the narcoleptic drugs used in the treatment of schizophrenia; etc. 1959. Illus., 224 pp.

## CLINICAL STUDIES in CULTURE CONFLICT

Edited by GEORGENE SEWARD, University of Southern California

An invaluable casebook by the author of PSYCHOTHERAPY AND CULTURE CON-FLICT. Discusses cultural disturbance prob-lems in patients from 5 ethnic sub-cultural groups. 25 Contributing authorities. 1958. 22 ills., 587 pp.

THE RONALD FRESS COMPANY 15 East 26th Street, New York 10, N. Y.

## CARE and TRAINING for the MENTALLY RETARDED CHILD

The Training School at Vineland provides care and treatment for boys and girls 2 years or older with mental potential of 6 years. Complete professional staff. Electroencephalographic, and neurological examinations, individual psychiatric, psychological, physiological, and speech observations and thera-

#### SIX COMPREHENSIVE PROGRAMS:

- Observation and Diagnosis
- Residential Supervision Summer Program
- Education and Training
   Psychiatric Treatment Custodial Care

The educational program aims at maximum development of each child. Training includes self-care; group living; formal classroom education; development of practical habits, attitudes and work skills. Children live in homelike cottages on 1600-acre estate. School, hospital, chapel, swimming pools, lake, working farm. The Training School Research Laboratory is famed for continuous study of causes, prevention and treatment of mental retardation. Established 1888. For information write: Registrar, Box N.

## THE TRAINING SCHOOL AT VINELAND. NEW JERSEY

A private, non-profit residential center for the care and treatment of the mentally retarded

## HALL-BROOKE HOSPITAL

An Active Treatment Hospital, located one hour from New York

Accredited by: The Central Inspection Board of the American Psychiatric Association The Joint Commission on Accreditation of Hospitals

## HALL-BROOKE, GREENS FARMS, BOX 31, CONN.

Telephone: WESTPORT CAPITAL 7-1251

George S. Hughes, M.D.

Leo H. Berman, M.D. Albert M. Moss, M.D. Louis J. Micheels, M.D.

Robert Isenman, M.D. John D. Marshall, Jr., M.D. Edward M. Keelan, M.D.

Peter P. Barbara, Ph.D.

## THE BRETT SCHOOL

DINGMANS FERRY, PENNSYLVANIA

In the Footbills of the Poconos

Intensive, highly individualized personal training for a small group of girls over five years of age. Carefully chosen staff. Special modern teaching techniques and program of therapeutic education. Varied handicrafts, cooking, nature study and field trips. Outdoor games, picnics and other activities. Comfortable, homelike atmosphere. Close cooperation with family physician. 70 miles from New York City.



References Frances M. King, formerly Director of the Seguin School Directors Catherine Allen Brett, M.A. Telephone Dingmans Ferry 8138

## THE ANDERSON SCHOOL

Staatsburg-on-Hudson, New York

The Anderson School is a co-educational, residential school, offering general, business, academic, and college entrance courses from grade seven through high school. The school is accredited by the New York State Department of Education, and a majority of its graduates regularly enter college or junior college. It is psychiatrically oriented and is well equipped with the most modern methods and procedures, not only in academic, recreational and modern school environment fields, but particularly in personnel and guidance of each individual student. A full-time psychiatrist and psychologist are in residence. Our work emphasizes a much wider concept of student training and growth than is conceived of in present-day education. Educating the student as a person, adjusting and maturing his personality is a primary aim.

V. V. ANDERSON, M.D., LL.D., Director For further information write to LEWIS H. GAGE, M.A., Headmaster

84 miles from New York City

Telephone: TUrner 9-3571

## The Children's Service

ROBERT E. SWITZER, M.D. DIRECTOR

Outpatient consultation, evaluation and treatment for infants and children of grade school to 18. Residential treatment for elementary grade children with emotional and behavior problems.

-The Menninger Clinic

TOPEKA, KANSAS

## REITER MOL-AC II

## SAFE

The Mol-AC II provides the highest degree of complete electrical isolation, by far exceeding official code requirements, to assure the maximum in safe operation.

## **EFFECTIVE**

Clinical results have been uniformly excellent. Side effects are automatically reduced. The Mol-AC II is acclaimed internationally by leading physicians and institutions.

## AUTOMATIC

The Mol-AC II provides a highest initial current to initiate seizure pattern with an automatic reduction to safe low voltage in every case. Instantly and automatically re-set for repeated treatments.

## **EASY TO USE**

Controls are simplified - one 3-position current intensity dial and one treatment switch. Just plug in ordinary AC current and the Mol-AC II is ready for immediate use. The Mol-AC II has a handsome walnut case. Attractively priced at \$100.00 complete with physician's bag and attachments.

## DURABLE

Ingenious design with only one moving part. Remarkable freedom from service requirement.

Reiter leads in progressive research.

AN OFFICIALLY APPROVED INSTRUMENT WHICH HAS ALSO WON POPULAR APPROVAL.

REUBEN REITER, Sc.D.

64 WEST 48th STREET, NEW YORK 36, N. Y.



## JOSIAH MACY, JR. FOUNDATION

Announces the publication of

## THE CENTRAL NERVOUS SYSTEM AND BEHAVIOR

Transactions of the Second Conference

Edited by Mary A. B. Brazier, Neurophysiological Laboratory Massachusetts General Hospital

Published with the cooperation of the National Science Foundation, this volume contains valuable material on the limbic system with respect to two basic life principles, the hippocampus and higher nervous activity, reversible decortication and behavior, electroencephalographic studies in conditional reflex formation in man, as well as some impressions of the Colloquium on Electroencephalography and Higher Nervous Activity held in Moscow, USSR, October, 1958.

342 pages, 87 illustrations, 2 color plates, I table, bibliography, index \$4.75

#### NEUROPHARMACOLOGY

Transactions of the Fourth Conference

Edited by Harold A. Abramson, Biological Laboratory, Cold Spring Harbor, and State Hospital, Central Islip, New York

The effect of respiratory poisons and anoxia on Siamese fighting fish in relation to LSD-25 reaction, clinical studies with taraxein, "stop" and "start" systems, and some relations between chemical structure and physiologic action of mescaline and related compounds, are some of the topics discussed in this stimulating volume. 268 pages, 48 illustrations, 12 tables, index \$5.00

JOSIAH MACY, JR. FOUNDATION PUBLICATIONS 16 WEST 46th STREET, NEW YORK 36, NEW YORK Please make checks payable to Josiah Macy, Jr. Foundation A catalog of all transactions in print will be sent upon request

## ATTENTION

Extension of the reduced subscription rate of \$5.00 (less than one-half the regular rate) for the AMERICAN JOURNAL OF PSYCHIATRY has been authorized to include medical students; junior and senior internes; first, second, and third year residents in training; and graduate students in psychology, psychiatric nursing, and psychiatric social work.

In placing your order, please indicate issue with which subscription is to start.

Send subscriptions to:

#### THE AMERICAN JOURNAL OF PSYCHIATRY

1270 AVENUE OF THE AMERICAS

NEW YORK 20, NEW YORK

What is the effect on man of

## The Undirected Society?

Sir Geoffrey Vickers' book, *The Undirected Society*, makes a contribution to the literature exploring the effect of our society on the lives of the people at the mercy of its rules. It deals specifically with the impact of rapid industrialization on the well-being of the individual and is inspired by the belief that ordinary men and women need new concepts to make sense of their new and threatening situation and that these concepts are waiting to be won by a common effort.

The distinguished author acted as consultant to the project, Man and Industry, held at the University of Toronto in the years 1957-58, which brought together more than a hundred prominent Canadians from business, government, organized labour, the professions, and the social sciences. Sir Geoffrey is a member of Britain's Medical Research Council and chairman of the research committee of the Mental Health Research Fund.

The papers included in the volume raise questions about human initiative and human valuation which challenge our understanding of the world we live in and of the processes of government—political, economic and social—which rule us and which we claim to rule.

162 pages \$4.50

Obtainable from your bookstore or direct from UNIVERSITY OF TORONTO PRESS, TORONTO 5, CANADA

U. S. Customers Note: American funds accepted at par Books shipped from New York

## ATTENTION

Extension of the reduced subscription rate of \$5.00 (less than one-half the regular rate) for the AMERICAN JOURNAL OF PSYCHIATRY has been authorized to include medical students; junior and senior internes; first, second, and third year residents in training; and graduate students in psychology, psychiatric nursing, and psychiatric social work.

In placing your order, please indicate issue with which subscription is to start.

Send subscriptions to:

## THE AMERICAN JOURNAL OF PSYCHIATRY

1270 AVENUE OF THE AMERICAS

NEW YORK 20, NEW YORK

## SANITARIUMS and PRIVATE HOSPITALS

## BALDPATE, INC.

Geo. Fleetwood 2-2131

Georgetown, Mass.

Located in the hills of Essex County, 30 miles north of Boston

For the treatment of

psychoneuroses, personality disorders, psychoses, alcoholism and drug addiction.

Definitive psychotherapy, somatic therapies, pharmacotherapy, milieu-therapy under direction of trained occupational and recreational therapists.

HARRY C. SOLOMON, M.D. Consulting Psychiatrist

George M. Schlomer, M.D.

Medical Director

## THE EMORY JOHN BRADY HOSPITAL 401 SOUTHGATE ROAD, COLORADO SPRINGS, COLORADO

MEIrose 4-8828

For the care and treatment of Psychiatric disorders.

Individual and Group Psychotherapy and Somatic Therapies.

Occupational, diversional and outdoor activities.

X-ray, Clinical Laboratory and Electroencephalography.

E. JAMES BRADY, M. D., Medical Director C. F. RICE, Superintendent

Francis A. O'Donnell, M. D. Robert W. Davis, M. D.

RICHARD L. CONDE, M. D. H. C. HOBBS, Ph. D. Clinical Psychology

## BRIGHAM HALL HOSPITAL CANANDAIGUA, NEW YORK

FOUNDED 1855

Individual psychotherapy, occupational and recreational programs, shock therapy, selected cases of alcoholism and addiction accepted.

Special consideration for Geriatric cases. HOWARD W. BERG, M.D., Medical Director

## CEDARCROFT SANITARIUM & HOSPITAL, INC. 12,101 COLUMBIA PIKE, SILVER SPRING, MD.

MAfair 2-1200

Nine miles from Washington, D. C. — In rural Maryland

Dedicated to the Care of neuropsychiatric disorders requiring special supervision and guidance. Individual and group psychotherapy, occupational and activity therapy emphasized. All other accepted therapies are available.

H. E. Andren, M. D. Medical Director

Member of N. A. P. P. H.

Accredited by Joint Commission on Accreditation of Hospitals

## COMPTON SANITARIUM

820 WEST COMPTON BOULEVARD

NE 6-1185 - NE 1-1148

COMPTON, CALIFORNIA

Member of American Hospital Association and National Association of Private Psychiatric Hospitals

High Standards of Psychiatric Treatment . . . . . Serving the Los Angeles Area

Fully Approved by Central Inspection Board of APA

Accredited by Joint Commission on Accreditation of Hospitals

G. Creswell Burns, M.D.

Medical Director

HELEN RISLOW BURNS, M.D. Assistant Medical Director

## FAIR OAKS

Incorporated

SUMMIT, NEW JERSEY

A 70-BED MODERN, PSYCHIATRIC HOSPITAL FOR INTENSIVE TREATMENT AND MANAGEMENT OF PROBLEMS IN NEUROPSYCHIATRY

20 MILES FROM NEW YORK CITY

OSCAR ROZETT, M. D.

Medical Director

TELEPHONE CRestview 7-0143

THOMAS P. PROUT, JR.

Administrator

Established

## FALKIRK HOSPITAL CENTRAL VALLEY, N. Y.

1889

TELEPHONE: HIGHLAND MILLS, NEW YORK, WABASH 8-2256

Devoted to the individual care and treatment of psychiatric disorders. An active therapy program and diversified buildings permits classification of patients.

Located 2 miles north of Harriman Exit (No. 16) N. Y. State Thruway 50 miles from New York City

Member N.A.P.P.H.

fully approved by Central Inspection Board of APA accredited by Joint Commission on Accreditation of Hospitals

T. W. NEUMANN, JR., M. D.

PERCY E. RYBERG, M. D. Clinical Director

## THE HAVEN SANITARIUM INC. ROCHESTER, MICHIGAN

M. O. WOLFE, M.D. Director of Psychotherapy RALPH S. GREEN, M.D. Clinical Director

GRAHAM SHINNICK
Manager

A psychoanalytically oriented hospital for the treatment of mental and emotional illnesses.

Telephone: OLive 1-9441

Phone: CHestnut 7-7346

## WINDSOR HOSPITAL

A Non Profit Corporation

## CHAGRIN FALLS, OHIO

Established 1898

A hospital for the treatment of Psychiatric Disorders. Booklet available on request.

JOHN H. NICHOLS, M. D. Medical Director

G. PAULINE WELLS, R. N. Administrative Director

HERBERT A. SIHLER, JR. Secretary

MEMBER: American Hospital Association - Central Neuropsychiatric Hospital Association - National Association of Private Psychiatric Hospitals

Accredited: by the Joint Commission on Accreditation of Hospitals

Keep and protect your Journals in this new **VOLUME FILE CASE** ATTRACTIVE INEXPENSIVE SERVICEABLE Note new price: \$2.50 each: 3 for \$7.00 Please add 25 cents postage for each file ordered ORDER DIRECT FROM AMERICAN JOURNAL OF PSYCHIATRY 1270 Avenue of the Americas New York 20, N. Y. WHEN ORDERING PLEASE SPECIFY VOLUME NUMBERS

# NOW-Series E Bonds

turn \$1875 into \$2500 fourteen months quicker than ever before



Here are three new reasons why today's Savings Bonds are the best ones in history:

- Every Bond bought since June 1, 1959, earns 3¾% interest when held the full term. Series E Bonds now mature in 7 years, 9 months—fourteen months faster than ever before.
- 2. Your older Bonds now earn more an extra ½% from June 1 on, until maturity.
- 3. All Series E Bonds, old and new, carry an automatic extension privilege now. This means they'll automatically keep earning liberal interest for 10 years beyond maturity.

  You get these new advantages, plus

You get these new advantages, plus complete safety, guaranteed return, and protection against loss or theft. And, you can buy Bonds automatically through the Payroll Savings Plan at work. Plan to start saving with U.S. Savings Bonds now.

YOUR MONEY GROWS 331/3 % IN JUST 7 YEARS AND 9 MONTHS WITH NEW SERIES E BONDS

YOU SAVE MORE THAN MONEY

# with U.S. Savings Bonds

The U.S. Government does not pay for this advertising. The Treasury Department thanks
The Advertising Council and this magazine for their patriotic donation.



Dexedrine'—one of the first psychomotor stimulant-antidepressants—
helps provide rapid symptomatic relief
of psychomotor inhibition. The characteristic effects of 'Dexedrine' include
a restored sense of energy and an
increase in verbal response and physical activity.



## DEXEDRINE® SPANSULE®

brand of dextro amphetamine

brand of sustained release capsules

5 mg., 10 mg. and 15 mg., in bottles of 30 and 250 capsules

## INTEGRATED SERVICES

THE SLOW-LEARNER or the child with emotional difficulties needs the resources of an organization that has many different approaches to the problems involved. Through the Devereux multidisciplined approach, the psychiatrist, the physician, the psychologist, the educator, and the rehabilitation specialist pool experiences to give each boy and girl the environment and training best designed to meet his individual needs. Students are assigned to one of twenty-two semi-autonomous residential schools in Pennsylvania and similar groups in California and Texas.

## CLINICAL STAFF

J. Clifford Scott, M.D.
Edwin H. Abrahamsen, M.D.
Aurelio Buonanno, M.D.
Charles M. Campbell, Jr., M.D.
Fred J. Culeman, M.D.
Ruth E. Duffy, M.D.
William F. Haines, M.D.
Robert L. Hunt, M.D.
Richard H. Lambert, M.D.
Joseph J. Peters, M.D.
Alvis J. Scull, M.D.
Jacob S. Sherson, M.D.
Albert S. Terzian, M.D.
Walter M. Uhler, M.D.
Tirso L. Vinueza, M.D.

Lance Wright, M.D.
F. Ellsworth Henry, S.T.D.
Milton Brutten, Ph.D.
William J. Cohen, Ph.D.
Dorothy E. Conrad, Ph.D.
Sidney L. Copel, Ed.D.
Michael B. Dunn, Ph.D.
Shirley M. Jahnson, Ph.D.
John R. Kleiser, Ph.D.
Murray Levine, Ph.D.
Henry Platt, Ph.D.
Edgar A. Smith, Ed.D.
George Spivack, Ph.D.
Herbert A. Sprigle, Ph.D.
Anne Howe, M.S.
Kenneth E. Evans, B.S.

Psychoanalytic Consultants

G. Henry Katz, M.D.

Herbert H. Herskovitz, M.D.

#### THE DEVEREUX FOUNDATION

A nonprofit organization

Devon, Pennsylvania

Santa Barbara, California

Founded 1912

.

Victoria, Texas

SCHOOLS
COMMUNITIES
CAMPS
TRAINING
RESEARCH

HELENA T. DEVEREUX
Administrative Consultant

EDWARD L. FRENCH, Ph.D. Director

WILLIAM B. LOEB Treasurer Professional inquiries for Eastern Schools should be directed to Charles J. Fowler, Registrar, Devereux Schools, Devon, Pa.; for Pacific Coast Schools, to Keith A. Seaton, Registrar, Devereux Schools in California, Santa Barbara, Calif.; Southwestern residents address Devereux Schools in Texas, Box 336, Victoria, Tex.

# THE AMERICAN JOURNAL of PSYCHIATRY

HAROLD WE MINKELSEN, M.D.

VOLUME 116 NUMBER 9 MAR. 1960

Official Journal of THE AMERICAN PSYCHIATRIC ASSOCIATION



for thetense andnervous patient

relief comes fast and comfortably

-does not produce autonomic side reactions -does not impair mental efficiency, motor control, or normal behavior.

Usual Dosage: One or two 400 mg. tablets t.i.d.

Supplied: 400 mg. scored tablets, 200 mg. sugar-

coated tablets or as MEPROTABS\*-400 mg.

unmarked, coated tablets.

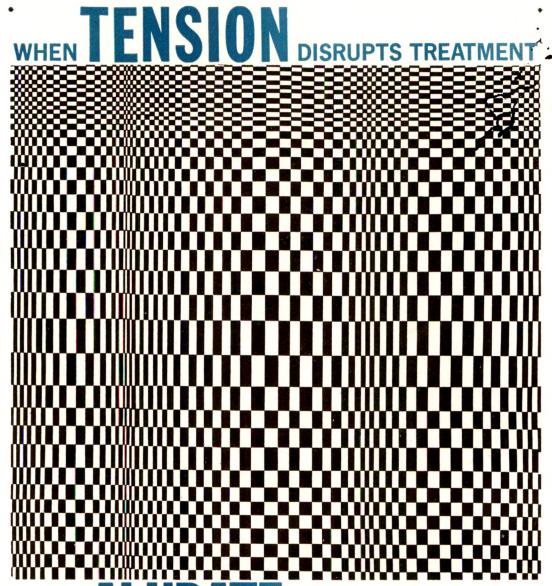




WALLACE LABORATORIES / New Brunswick, N. J.

4	MARCH	CONTENTS	1960
-	-	CHIATRY. Henry P. Laughlin	
	EUROPEAN PSY	CHIATRY, Henry P. Laughlin	759
		WTAL HEALTH ACT IN ENGLAND AND WALES. W. S. Maclay	
	JOINT COMMIS	SION ON MENTAL ILLNESS AND HEALTH. Jack R. Ewalt, Morris S. Schwar Appel, Leo H. Bartemeier, and Charles Schlaifer	rtz,
		UDIES WITH SPECIAL REFERENCE TO PSYCHIATRISTS. Daniel Blain, Howa Harry Solomon	
	THE DEVELOPM K. Bahn	MENT OF AN EFFECTIVE STATISTICAL SYSTEM IN MENTAL ILLNESS. An.	ita 798
	FURTHER DEVE	ELOPMENTS IN THE DAY HOSPITAL. T. J. Boag	801
	Home Treatm Phyllis Rolf	TENT OF PSYCHIATRIC PATIENTS. Tobias T. Friedman, Stewart E. Perry, a	nd <b>80</b> 7
	THE MENTAL F J. O'Neill	HOSPITAL: CORNERSTONE FOR COMMUNITY PSYCHIATRIC SERVICES. Fran	cis 810
		OR A COMMUNITY-BASED HOSPITAL AS A BRANCH OF A STATE HOSPITA	
		ENTAL HOSPITAL IN TRANSITION. Frank F. Tallman	
		D FUNCTION OF THE PREDOMINATING SYMPTOM IN SOME BORDERLISH.  H. Bartemeier	
	THE PSYCHIAT	rist and the Release of Patient Information. Marc H. Hol <mark>l</mark> ender	828
		UP OF DISCHARGED MENTAL PATIENTS BY THE PUBLIC HEALTH NURS Beasley, Claire S. Callaway, and Trawick H. Stubbs	
	CLINICAL NOT	ifluoperazine (Stelazine) in Chronic Mental Illness, Robert B. Cahan	338
	G. Blumber	vided and Single Dose Schedules in Insulin Coma Therapy. Max Fink, Arno	339
	Forrest	of Treatment of Chronic Hospitalized Psychotic Individuals with Promazi	840
	(Sparine).	Anthony I. Graffeo	842
	Observation o	on Two Psychotomimetic Drugs of Piperidine Derivation—CI 395 (Sernyl) a conard Levy, D. Ewen Cameron, and R. Cairns B. Aitken	and 843
	Thrombocytop	pomanic Excitement with Imipramine Treatment of Depression. C. E. Schorer . penia in Prolonged Chlorpromazine Therapy. J. R. Shawver, and Stanley M. T	ar-
			845
	Agranulocytos and Charles	: sis Following Use of Imipramine Hydrochloride (Tofranil). P. A. Rothenbe s Hall	erg,
	Preliminary Treatment of A Preliminary	REPORTS: Depressive States with Marplan. Jane E. Oltman, and Samuel Friedman Report on a New Psychotropic Compound (Ro 4-0403/4). Walter Kruse	848 849
	COMMENTS: New Mental I Mental Health	Health Act. England and Wales	851 851
	CORRESPONDEN Statistics and	NCE: Statisticians	854
	· NEWS AND NO	OTES	855
	OFFICIAL REPO	ORTS: Note	857
	Book Reviews	s	859
	IN MEMORIAM	1:	863

ì



## ELIXIR ALURATE DISRUPTS TENSION

Dependable, prompt-acting daytime sedative.

Broad margin of safety. Virtually no drowsiness. Over a quarter century of successful clinical use. Alurate is effective by itself and compatible with a wide range of other drugs. To avoid barbiturate identification or abuse, Alurate is available as Elixir Alurate (cherry-red) and Elixir Alurate Verdum (emerald-green).

Adults: ½ to 1 teaspoonful of either Elixir Alurate or Elixir Alurate Verdum, 3 times daily. ALURATE®-brand of aprobarbital.

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc • Nutley 10, N. J.

# THE AMERICAN JOURNAL OF PSYCHIATRY

VOLUME 116

MARCH 1960

No. 9

#### **EDITOR**

CLARENCE B. FARRAR, M. D., 216 St. Clair Avenue, West, Toronto 7, Ont.

#### **BUSINESS MANAGER**

Austin M. Davies, Ph. B., 1270 Avenue of The Americas, New York 20, New York

#### ASSOCIATE EDITORS

WILLIAM RUSH DUNTON, JR., M. D. KARL M. BOWMAN, M. D.

Franklin G. Ebaugh, M. D. Walter L. Treadway, M. D.

STANLEY COBB, M. D. JOHN C. WHITEHORN, M. D.

S. Spafford Ackerly, M. D. Paul H. Hoch, M. D.

Leo Kanner, M. D. Titus H. Harris, M. D.

LAUREN H. SMITH, M. D. FRANCIS J. GERTY, M. D.

#### EDITORIAL ASSISTANTS

ANITA GERSHENOVITZ, M. A. SYLVIA L. LAMBERT, B. A.

#### FORMER EDITORS, 1844-1931

AMARIAH BRIGHAM, M. D., Founder, 1844-1849

T. ROMEYN BECK, M. D. JOHN P. GRAY, M. D. G. ALDER BLUMER, M. D.

RICHARD DEWEY, M. D. HENRY M. HURD, M. D. EDWARD N. BRUSH, M. D.

Published by
THE AMERICAN PSYCHIATRIC ASSOCIATION
THE DARTMOUTH PRINTING COMPANY
HANOVER, N. H.

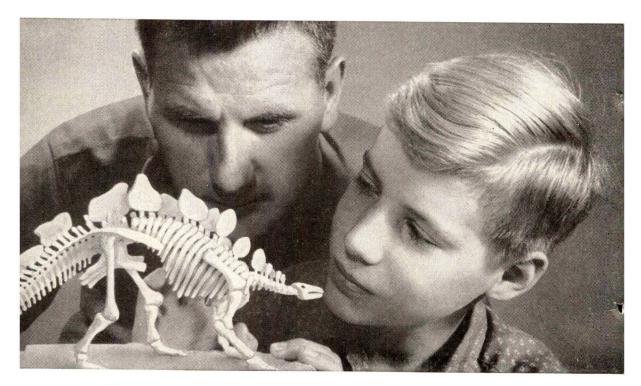
To facilitate psychotherapy in the emotionally disturbed child, and to enable him to lead a stable life during such therapy, adjunctive treatment with Prozine is often advantageous. In reporting on 176 disturbed children who received Prozine, Ehrmantraut et al. found that 85.8 per cent showed moderate to marked improvement in behavior reactions and adjustment to institutional care.

Prozine, designed for the treatment of moderate to severe emotional disturbances, helps control psychomotor agitation as well as anxiety and tension.

1. Ehrmantraut, W., et al.: Scientific Exhibit Presented at the District of Columbia Medical Society Meeting, Nov. 24, 1958, Washington, D.C.

Wyeth Laboratories Philadelphia 1, Pa.

## controlled: an acute behavioral problem







## THE AMERICAN PSYCHIATRIC ASSOCIATION OFFICERS 1959-1960

President: WILLIAM MALAMUD
Vice President: FRANKLIN G. EBAUGH
Secretary: C. H. HARDIN BRANCH

President-Elect: ROBERT H. FELIX
Vice President: S. SPAFFORD ACKERLY
Treasurer: ADDISON M. DUVAL

#### COUNCILLORS

For 3 years
Francis J. Gerty
Paul Hoch
Calvin Drayer
Aldwyn Stokes

For 2 years Harry C. Solomon Lawrence Kolb, Jr. Dana L. Farnsworth Robert T. Morse For 1 year
Francis J. Braceland
Paul Huston
George Tarjan
Jacques Gottlieb

#### EXECUTIVE COMMITTEE

WILLIAM MALAMUD ROBERT H. FELIX C. H. HARDIN BRANCH Addison M. Duval Francis J. Gerty Jacques Gottlieb

Ex-Officio
FRANKLIN G. EBAUGH
S. SPAFFORD ACKERLY

## ASSEMBLY OF DISTRICT BRANCHES

ALFRED AUERBACK (Speaker) John R. Saunders (Speaker Elect)

LESTER SHAPIRO (Recorder)

#### MEDICAL DIRECTOR

MATHEW Ross, 1700-18th Street, N. W., Washington 9, D. C.

#### EXECUTIVE ASSISTANT

AUSTIN M. DAVIES, 1270 Avenue of the Americas, New York 20, New York

#### CHAIRMEN OF COMMITTEES

CONSTITUTIONAL COMMITTEES

Arrangements
ROBERT GARBER
Board of Tellers
EVELYN IVEY
Membership
DICK MCCOOL
Nominating
LEO BARTEMEIER
STANDING COMMI

STANDING COMMITTEES (Internal Activities of the Association)

Budget
JACK R. EWALT
Constitution and By-Laws
HENRY A. DAVIDSON
Ethics
MESROP TARUMIANZ

House Committee
ZIGMOND LEBENSOHN
Increasing Responsibilities of
the APA

HARVEY J. TOMPKINS

Program

John Donnelly

STANDING COMMITTEES
(Technical Aspects)
HARVEY J. TOMPKINS
Coordinating Chairman

Aging
EWALD W. Busse
Child Psychiatry
J. Franklin Robinson

History of Psychiatry
J. Sanbourne Bockoven
Medical Education
George C. Ham
Mental Deficiency
Howard Bair
Public Health
James V. Lowry
Rehabilitation
Benjamin Simon
Research
Milton Greenblatt
Theraby

HENRIETTE R. KLEIN

STANDING COMMITTEES
(Professional Standards)
WILFRED BLOOMBERG
Coordinating Chairman

Psychiatry and the Law Louis Gendreau Liaison with American Academy Robert Matthews

Liaison with American Hospital Association RAYMOND W. WAGGONER Mental Hospitals

JOSEPH E. BARRETT

Nomenclature and Statistics

Moses Frohlich

Private Practice
JOHN COTTON
Psychiatric Nursing
GRANVILLE JONES
Psychiatric Social Work
MAURICE FRIEND

ES

Relations with Psychology
JOEL S. HANDLER

Standards and Policies of
Hospitals and Clinics
STEWART GINSBERG
STANDING COMMITTEES
(Community Aspects of Psychiatry)
PAUL LEMKAU
Coordinating Chairman
Academic Education
C. DOUGLAS DARLING
Cooperation with Leisure Time
Agencies
ALEXANDER MARTIN
Disaster and Civil Defense

Agencies
ALEXANDER MARTIN
Disaster and Civil Defense
EDWARD J. KOLLAR
Occupational Psychiatry
RALPH T. COLLINS
International Relations
LOTHAR KALINOWSKY
National Defense
BEN JAMIN H. BALSER
Preventive Psychiatry
HENRY WORK
Public Information
HENRY LAUGHLIN

Public Information
HENRY LAUGHLIN
Religion and Psychiatry
EARL LOOMIS

Veterans
JULIUS SOBIN

SPECIAL COMMITTEE
Certification of Mental Hospital
Administrators

WINFRED OVERHOLSER

"...the
patients'
became
easily
manageable"

"...side
effects¹
were
gratifyingly
low
in
incidence"



dihydrochloride

brand of thiopropazate dihydrochloride

In chronic schizophrenia<sup>1</sup> the normalizing influence of Dartal became evident by a return to a quiet and normally active behavior, reduced aggressiveness and tension, lessened anxiety and delusions, and better subjective feeling in 81.5 per cent of a series of fifty-four patients.

All in this group had been refractory to shock therapy, hydrotherapy and ataraxic drugs, and seven had undergone psychosurgery.

Dartal was preferred by the patients to other methods of therapy because side actions were infrequent (occurring in 4 per cent); all side effects were readily reversible.

In another study<sup>2</sup> the drug was found particularly useful in patients with association defect, depersonalization and anxiety, while patients with mood depression did not respond.

The usual dose is one 10-mg. tablet, one to three times daily; individual dosage adjustment is, however, especially important.

SEARLE

<sup>1.</sup> Ferrand, P. T.: Minnesota Med. 41:853 (Dec.) 1958.

<sup>2.</sup> Edisen, C. B., and Samuels, A. S.: A.M.A. Arch. Neurol. & Psychiat. 80:481 (Oct.) 1958.

## AMERICAN JOURNAL OF PSYCHIATRY

#### INFORMATION FOR CONTRIBUTORS

- Manuscripts—The original manuscripts of papers read at the annual meetings of the Association should be deposited with the Secretary during the meetings, or sent to the New York office promptly afterward. Do not deposit carbon copies.
- Papers read at the annual meetings become the property of the Association. Not all papers read, however, can be published in the JOURNAL, and authors wishing to publish in other vehicles will first secure from the Editor the release of their manuscripts.

Papers will not be accepted for the annual program if they have been previously read at other meetings or if they have been already published.

Papers contributed during the year (not on the annual program) should be sent to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

- Style—Manuscripts should be typewritten, double spaced, on one side of the paper. They must be prepared in conformity with the general style of The American Journal of Psychiatry. Retain a carbon copy of manuscript and duplicates of tables, figures, etc., for use should the originals be lost in the mails.
- Multiple Authorship—The number of names listed as authors should be kept to a minimum, others collaborating being shown in a footnote.
- Illustrations—Authors will be asked to meet printer's costs of reproducing illustrative material.

  Copy for illustrations cannot be accepted unless properly prepared for reproductions. Wherever possible, drawings and charts should be made with India ink for photographic reproduction as zinc etchings. Photographs for halftone reproduction should be glossy prints. Illustrations should be as small as possible without sacrificing important detail. Redrawing or preparing illustrations to make them suitable for photographic reproduction will be charged to author.
- Authors' Corrections in Proofs—Corrections, additions or deletions made by authors are to be charged to them. These alterations are charged on a time basis at the rate of \$7.00 per hour. Proper editing of original manuscript is important to avoid the expense of correction.
- Tables—Tables should be typed on separate sheets. Tables are much more expensive to set than text material and should be used only where necessary to clarify important points. Authors will be asked to defray cost of excessive tabular material.
- References—References should be assembled according to author in a terminal bibliography, referred to in text by numbers in parentheses. Bibliographical material should be typed in accordance with the following style for journals and books respectively:
  - 1. Vander Veer, A. H., and Reese, H. H.: Am. J. Psychiat., 95: 271, Sept. 1938.
  - 2. Hess, W. R.: Diencephalon. New York: Grune & Stratton, 1954.

Abbreviations should conform to the style used in the Quarterly Cumulative Index Medicus.

The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

Articles appearing in this Journal do not necessarily reflect the official attitude of The American Psychiatric Association or of the Editorial Board.

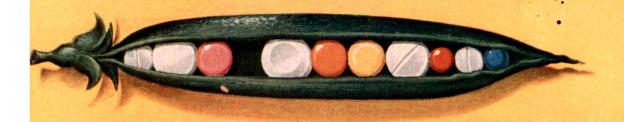
The subscription rates are \$12.00 to the volume: Canadian subscriptions \$12.50; foreign subscriptions, \$13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate in psychology, psychiatric social work, and psychiatric nursing, \$5.00 (Canada \$5.50). Single issues, \$1.25. Copyright 1960 by The American Psychiatric Association.

Office of Publication, 10 Allen St., P.O. Box 832, Hanover, N. H.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 10 Allen St., P.O. Box 832, Hanover, N. H., or to 1270 Avenue of the •Americas, New York 20, N. Y.

Editorial communications, books for review, and exchanges should be addressed to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

Second class postage paid at Hanover, New Hampshire.



how does Mellaril differ from other potent tranquilizers?

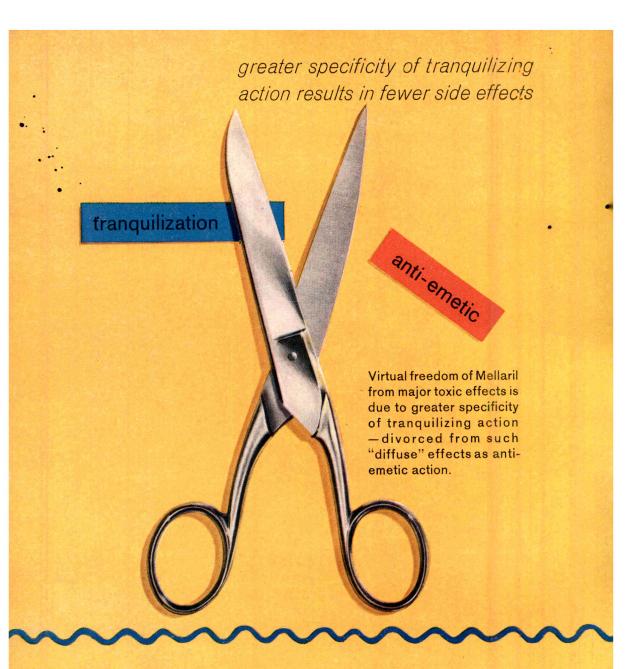
# Mellaril

specific, effective tranquilizer

provides highly effective tranquilization, relieves anxiety, tension, nervousness, but is virtually free of such toxic effects as jaundice

Parkinsonism blood dyscrasia

dermatitis



"Thioridazine [Mellaril] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines.... This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."\*



## SQUIBB ANNOUNCES

## once a day dosage for the psychiatric patient



Prolixin is a new, exceptionally effective behavior modifier with sustained and prolonged action for your psychiatric patients. Its extended action, permitting a single daily dose, has been thoroughly demonstrated in clinical trials.<sup>1,2</sup>

Prolixin is particularly useful in the management of acute and chronic psychotic states characterized by agitation, excitement, explosive behavior and turbulence — in such conditions as schizophrenia, mania, psychoses due to organic brain disease, and senile psychoses.

Providing lowered toxicity and maximum economy, Prolixin not only elicits a greater therapeutic response but also affords improvement in many patients previously refractory to other phenothiazines. This is true whether the mental disorder is of short or long duration.

The usual extrapyramidal symptoms encountered with other potent phenothiazine derivatives have been reported.<sup>1-3</sup> Less common effects have been hypotension,<sup>4</sup> drowsiness,<sup>5</sup> agitation,<sup>7</sup> restlessness,<sup>4</sup> and anorexia.<sup>6</sup> Side effects have disappeared with reduced dosage or temporary discontinuance of the drug.<sup>2,5,6</sup> 'PROLIXIN' IS A SQUIBB TRADEMARK

Dosage: Optimum dosage levels vary from patient to patient and must be determined individually. Most patients may be maintained on 1 mg. – 5 mg. daily, Supply: 1.0 mg., 2.5 mg., and 5 mg. tablets. References: 1. Taylor, I.J.: Clin. Res. Notes 2:1 (Aug.) 1959. 2. Morrow, L.L.: Clin. Res. Notes 2:8 (Aug.) 1959. 3. Darling, H.F.: Dis. Nerv. System 20:167 (April) 1959. 4. Niswander, G.D., and Karacan, I.: Dis. Nerv. System (In Press). 5. Freed, J.E.: Clin. Res. Notes 2:12 (Aug.) 1959. 7. Stevenson, L.E.: Clin. Res. Notes 2:10 (Aug.) 1959.



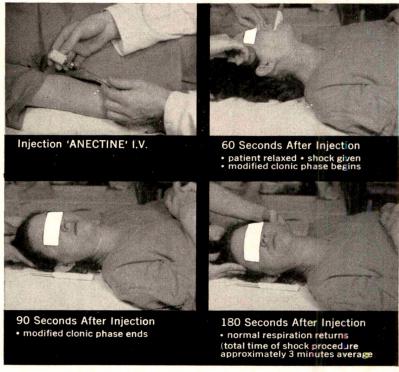
## **SQUIBB**

Squibb Quality the Priceless Ingredient

## SAFER ELECTROSHOCK THERAPY

ultra-short-acting skeletal muscle relaxant

relaxant ANECTINE Per le l'and Chloride Chloride



rapid relaxation rapid recovery

## Comments from the literature:

"... method of choice."

Havens, L. L.: Dis. Nerv. System 19:1 (Jan.) 1958

"... recommend its use."

Impastato, D. J., and Gabriel, A. R.: Am. J. Psychiat. 114:698 (Feb.) 1958.

"... treatment of choice."

Michael, K. D., and Wunderman, D. C.: J. Nerv. & Ment. Dis. 126:535 (June) 1958,

"... irrespective of age."

Robie, T. R.: J. M. Soc. New Jersey 52:82 (Feb.) 1955.

Complete literature available upon request.

'Anectine'® brand Succinylcholine Chloride Injection: 20 mg. in each cc., multi-dose vials of 10 gc.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

The onset of antidepressant activity is very rapid...."
"Improvement is progressive...." "...eighty per cent of patients were discharged...as recovered...."

It is our opinion that the drug is suitable for both..." ambulatory or hospitalized depressed patients.

corrective—removes the depression and depression-induced anxiety, rather than merely masking the symptoms as do tranquilizers, CNS stimulants or sedatives. rapidly effective—unlike many similar drugs, Nardil's antidepressant response is often seen within a week; complete remission usually within 2 to 6 weeks, in 4 out of 5 patients. safe—low dosage and preferential distribution to the brain account for the minimal incidence of toxicity in over 400,000 patients to date, and confirm Nardil's excellent safety record.



brand of phenelzine dihydrogen sulfate

These ten references to the antidepressant action of Nardil in the literature further confirm the rapid effectiveness and low toxicity of this simple tablet therapy.

DOSAGE: 1 tablet, t.i.d.

SUPPLIED: Orange-coated tablets, each containing 15 mg. of phenylethylhydrazine present as the dihydrogen sulfate. Bottles of 100.



drogen sulfate. Bottles of 100.

REFERENCES: 1. Thal, N.: Dis. Nerv. System 20:197 (Pt. 1)
1959. 2. Sainz, A.: Dis. Nerv. System 20:537, 1959. 3. Sainz,
A.: Ann. New York Acad. Sc. 80:780, Art. 3, 1959. 4. Saunders, J. C., Kline, N. S., et al.: Am. J. Psychiat. 116:71, 1959.

5. Arnow, L. E.: Clinical Med. 6:1573, 1959. 6. Dickel, H. A., et al.: Clinical Med. 6:1579, 1959. 7. Dunlop, E.: Rhode Island M. J. 42:656, 1959. 8. Sarwer-Foner, G. J., et al.: Canad. M. A. J. 81:991, 1959. 9. Hobbs, L. F.: Virginia Med. Monthly 86:692, 1959. 10. Dun-MORRIS PLAINS, N.J. lop, E.: Dis. Nerv. System (in press) 1960.

### for proved antidepressant effect both rapid and prolonged

### DEXAMYL® SPANSULE®

brand of dextro amphetamine and amobarbital

brand of sustained release capsules



'Dexamyl' has been used successfully for more than a decade, and in sustained release form for almost six years. Just one 'Dexamyl' *Spansule* capsule, taken in the morning, provides daylong therapeutic effect. And mood elevation is usually apparent within 30 to 60 minutes.

'Dexamyl' is of significant value in

depressed and verbally inhibited patients. Drayton¹ states, "Not only does ['Dexamyl'] exert a direct mood effect, so that the shadow of depression is lifted, but it also results in making the patient more approachable and communicative."

1. Drayton, W., Jr.: Pennsylvania M. J. 54:949.

leaders in psychopharmaceutical research





# Lifts depression...as it calms anxiety!

Deprol helps balance the mood by lifting depression as it calms related anxiety

No "seesaw" effects as often found with other drugs

While many central nervous stimulants may inhibit depression — they may often aggravate anxiety and tension. And although some central nervous depressants may counteract excessive stimulation—they may often deepen depression.

In contrast to such "seesaw" effects, Deprol lifts depression as it calms anxiety—both at the same time.

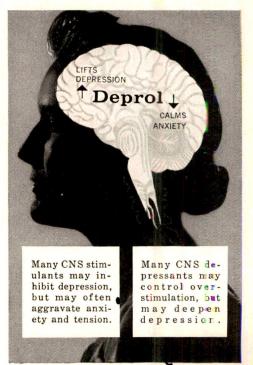
Deprol does not produce hypotension, liver damage, psychotic reactions or changes in sexual function.

# 'Deprol'

**Dosage:** Usual starting dose is 1 tablet q.i.d. When necessary, this may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

Supplied: Bottles of 50 light-pink, scored tablets. Write for literature and samples.





### Amytal® provides uniform daytime sedation

Clinically, Amytal has been shown to be valuable in the treatment of psychoneurosis. In a comparative study of fifty-one psychoneurotic outpatients with tension, Amytal was superior to all other agents tested.<sup>1</sup>

The duration of effect of Amytal is about eight to eleven hours, an action span particularly valuable for daytime sedation. It also offers the additional advantages of greater safety, since it is metabolized and does not depend on the kidneys for elimination. Therefore, renal damage does not constitute a contraindication.

The usual dosage is 1/4 grain four times a day.

Available in tablets of 1/4, 1/2, 3/4, and 1 1/2 grains, and in elixirs containing 2 grains and 4 grains per ounce.

Amytal® (amobarbital, Lilly)

1. Brit. M. J., 2:63, 1957.

ELI LILLY AND COMPANY . INDIANAPOLIS 6, INDIANA, U.S.A.

Dr. Thomas P. Rees, Past-Pres. of the Royal Medico-Psychological Association, Dr. Robert W. Armstrong, Pres., RMPA, Dr. Henry P. Laughlin, Representative of the American Psychiatric Association, Dr. Alan B. Monro, Sec'y, RMPA, and Dr. L. C. Cook, Pres.-Elect, RMPA.

ال

OXFORD: R.M.P.A. MEETINGS

#### **EUROPEAN PSYCHIATRY:** ENGLAND, DENMARK, ITALY, GREECE, SPAIN, AND TURKEY

HENRY P. LAUGHLIN, M.D.1

In view of increasing interest in world medicine it seems appropriate to publish the following notes concerning medicine and psychiatry in 6 European countries. They are summaries of information, secured on a recent world tour in which I represented the American Psychiatric Association.

Statistics included were furnished by leaders in the various countries. Comments and opinions expressed are theirs or the author's, and do not reflect official attitudes of the Association. Certain findings relating to Asia and the Middle East have already been published (1, 2, 3).

#### ENGLAND

#### PSYCHIATRY IN MEDICAL TEACHING

Most psychiatrists seem to agree that psychiatric teaching needs to be strengthened in the medical curricula. This objective presents many problems. These include: (a) the difficulty of modifying established tradition, (b) the relative indifference of other physicians, (c) bureaucratic unwieldiness inherent in the National Health Service, and (d) difficulties in securing funds.

The General Medical Council presently requires in the standard medical school curriculum a minimum of only 8 lectures on normal psychology, and a mental hospital course of two months. There is no formal requirement with the hospital course for systematic lectures or for examinations to be taken. The average undergraduate teaching in psychiatry takes place in 3 months of the last year, with attendance required at regular lectures two to three times per week. A total of approximately 12 hours is spent in visiting mental hospitals. The amount of time and interest given to psychiatry is slowly growing but could stand substantial increases in many schools. There are 30 physicians from the United Kingdom enrolled in American psychiatric residency training programs.

The medical school teaching of psychiatry has been improving. Six medical schools -Leeds, Sheffield, St. Andrews, Durham and Glasgow-have added chairs of psychiatry since World War II. Edinburgh has the oldest chair (60 years). There are also full chairs at London (Maudsley), Manchester and Aberdeen, but not as yet at Oxford, Birmingham, Bristol, Liverpool, Cambridge or the University of Wales. There is, however, a Department of Psychological Medicine in each medical school.

The future development of psychiatry in England has certain problems which are closely tied to its relative level of prestige among the medical specialties, and to its status in medical education. More psychiatry should be taught, but medical curricula are firmly established, and changes are difficult to secure. Evolution and development of medical teaching in England tend to be slow and deliberate. Tradition carries great weight and physicians generally have little interest in psychiatry. One may hear this kind of attitude expressed, "My schooling was fine; it serves me well enough, why change it?" Or, "What need have the new doctors for more psychiatry?"

Money has been hard to get to establish new chairs of psychiatry. The relatively low level of prestige of our specialty in medicine generally, helps maintain a kind of vicious cycle. Thus, in medical school, too few students become really very familiar with psychiatry; as a consequence fewer choose it as their specialty.

This means fewer physicians in later life who understand psychiatry or are sympathetic to its problems. All of this becomes of even more moment when today's graduates are later serving in important administrative positions or secure appointments as deans of medical schools. Also fewer psychiatrists means a smaller and less potent psychiatric group to press for con-

<sup>1 6800</sup> Hillcrest Place, Chevy Chase 15, Md.

structive changes. We are by no means entirely unfamiliar with these problems in North America.

Some psychiatrists blame the unwieldiness of the National Health System for restricting change and development. Inevitably an interest in politics may become necessary even for physicians with little such interest. Thus one prominent psychiatrist, deeply concerned with the need for more medical teaching in our specialty, discussed with me hopefully an M.P. who has an active interest in psychiatry—his hope being that the M.P. might be willing to bring his influence somehow to bear to secure some increased teaching time for psychiatry in the medical schools.

#### NATIONAL HEALTH SERVICE

I soon found that discussion of any aspect of medical practice is not likely to proceed far before the very considerable impact of Great Britain's National Health Service becomes most evident. This is certainly true in psychiatry. The overall effects on our specialty have been quite mixed in the 11 years since this program began operating in 1948. These are neither all good, nor all bad.

Dr. A. B. Monro, the Superintendent of Long Grove Hospital, Epsom, Surrey, a distinguished recent guest in the U. S. A., and the Hon. Secretary of the Royal British Medico-Psychological Association, with others helped to outline some of the important consequent trends in British psychiatry.

First, there is less isolation of the mental hospitals and their staffs from their communities. Staff members are busier acting as consultants, working in outpatient clinics, and in visiting patients in their homes and in general hospitals. There are increasing efforts on the part of staff and community to make psychiatry and the mental hospital more of a community activity and responsibility. Secondly, the taking of the mental hospitals out of local control has effected great improvements in some instances.

Thirdly, there are the equalizing effects of N. H. S. care. The available facilities in psychiatry are now more standardized. Further, pay scales and consultant status in the provincial hospitals are now comparable to those in the metropolitan centers. Indi-

vidual competition among specialists appears somewhat lessened. Finally, there is gradually more teaching of psychiatry in the medical schools, although, as already noted, improvement proceeds slowly and schools vary a good deal in their approach and in the calibre of psychiatric instruction.

On the other hand, there is much less private practice. High income tax rates discourage practice after official hours and few psychiatrists can stay outside of N. H. S. A standard level of pay is given for hospital and teaching work, previously largely unpaid or only by honorarium. However, this also lessens the interest in private practice.

From the standpoint of the administrators and the hospital superintendents this all has its advantages. According to their view, N. H. S. "has stopped the drain of psychiatrists away from hospitals into private practice." They have more adequate staffs both numerically and selectively.

Finally, in view of the tax situation, it is very difficult for a psychiatrist to top an annual income of three or four thousand pounds (\$8,400-\$11,200) from private practice, or any other source. His full time consultant's pay through N. H. S. can reach this without supplemental income from private work.

Some patients have doubts about medical opinions for which they do not personally pay. This appears more common on the provincial level than in metropolitan London, for instance. It does not seem to be a major problem in N. H. S. operations.

Some 600 psychiatrists have consultant status with N. H. S. While such services can be on a full or part time basis, the majority are full time and salaried. In summary, it seems that the greatest benefits have accrued to the mental hospitals. Individual initiative, the availability of private care, private practice and psychotherapy have suffered.

#### ADVANCE NATIONAL PLANNING INDICATED .

Several of our British colleagues urged that I convey a friendly but serious warning to American physicians. Should a National Health Service ever impend in North America, physicians and psychiatrists should actively undertake advance planning on a responsible and national level immediately.

By this means two of the greatest difficulties might be somewhat mitigated: 1. The inevitable initial disorganization, and 2. The great difficulty and red tape which they have found upon attempting to secure any changes or modification of rules and regulations once established, no matter how early afterwards these might be sought, or by whom.

A detailed plan of operation offered by a national group of specialists is likely to be most welcome initially if at all equitable. Later, the most careful recommendations may carry little weight. Should we fail to act thus collectively, constructively, and in advance, then we "jolly well deserve what will most certainly transpire!"

#### THE R.M.P.A.

Most psychiatrists in Great Britain belong to the Royal Medico-Psychological Association. Its members number some 1500 specialists, 75% of an estimated 2000 psychiatrists. The papers presented at the meetings were intriguing as to the subjects selected and the resulting indications for current British psychiatry.

It was possible to exchange information with noted colleagues from other countries at these meetings, including Dr. Tsung-yi Lin, Chairman of the N. & P. Department at National Taiwan University Hospital(1), Dr. Bor F. Nilsson of Stockholm and Dr. Harry Stokhom of Risskov, Denmark.

#### DENMARK

Denmark, largely agricultural, has about 4½ million people (nearly one-fourth in Copenhagen). Medicine and psychiatry in Denmark as in England are profoundly influenced by a National Health Service. Some 77% of the people are covered. The Danish N. H. S. has both advantages and disadvantages, as do many aspects of this semi-welfare state.

On one side, there is little real poverty in Denmark. Living conditions are good, with ample food for all. Education is generally available: anyone can attend the university if he has the ability, and the family will pay some slight costs. The lower schools are good, as are hospitals, and general medical care is available to anyone at modest cost.

Details of the Danish Health Service are less well known then those of the N. H. S. in England. A patient who needs psychiatric care consults his psychiatrist by referral from his general physician. Under Health Service he pays a single annual fee of 60 crowns (\$8.57). This covers one year's care regardless of the time or services involved, and is intended to pay for everything needed from a single consultation to extended therapy. The unfortunate result is that N. H. S. patients are very likely to be seen only once, and then promptly returned to their Health Service general physician for followup and further care. The psychiatrist is simply unable to provide anything like definitive care to outpatients on this basis. The patient pays little for his psychiatric care, but he is also likely to receive very little.

Hospitalization for psychiatric patients works out considerably better when it is required. Three crowns (43¢) daily pays for everything—hospital costs, room, medicine, physicians' and surgical fees. A private room raises this cost to 15 crowns (\$2.13) daily.

Under the Service plan a general physician is chosen yearly by the family. The doctor is paid 14 crowns (\$2.00) yearly for each adult; there is no charge for children. The physician can refuse a patient and patients can change their doctors yearly, or in between. Twenty-three percent of Danes cannot enroll at present because of income level restrictions; a top ceiling of about 14,000 crowns is set. Proposed legislation could soon make the service available to all.

Critics of this system point out: 1. Its high cost nationally, 2. Its impact upon individual initiative, 3. Its hampering effect upon private practice, 4. Its restrictions upon making the best level of care more widely available (particularly in psychotherapy), and 5. The growth and influence of bureaucracy. The impact of high income taxes in Denmark restricts interest in private practice as we observed in Great Britain—possibly more. A leading Danish psychiatrist discussed with me his annual income of 35,000 crowns (\$5,000) as a half-time Department Head. He earns an additional 35,000 crowns from his private prac-

tice. From this combined income he pays back 35,000 crowns annually in income taxes.

Because of certain advantages (such as the availability of Health Service) it is claimed that some Danes prefer to keep their income below 15,000 crowns. Above this figure also, the tax rate rises quite tap ly in progressive fashion. Initiative suffers. As a consequence an opportunity for new work, a better job, or extra business sometimes may be turned down flatly, with the comment, "I can't afford it" (to earn the extra income!). According to one psychiatrist, as wealth and spending power lose some of their relative importance to people, prestige of position has become more important in Denmark.

Of the approximately 150 Danish psychiatrists, some 125 are members of the Danish Psychiatric Association (President 1957-59, Professor (of Psychiatry) Villars Lunn of the Copenhagen University Faculty of Medicine). There are two medical schools. Professor Erich Stromgren is department head at the Faculty of Medicine of Aarhus University (Dr. Stokholm, mentioned earlier, is also a faculty member here).

At Copenhagen the 7-year program includes pre-medical education, and upon completion an M.D. degree is awarded, after which one year of internship is required. I visited the excellent University Clinic with Dr. Lass M. Sonne and observed various types of patients. Interesting experiments were in progress on the effects of employing different color combinations for patients' wards. Here there are 120 adult beds and a staff of 19 doctors, with 5 of them qualified as psychiatrists.

In the Copenhagen area are 3 other major psychiatric departments as integral parts of general hospitals: 1. Bispebjerg with 200 beds and 20 for child psychiatry (Head, Dr. Carl Clemmesen, with a staff of 9), and 2. Frederiksberg with 140 beds. Saint Hans Hospital in Roskilde, 30 km. distant is the third. It has 2000 beds and takes cases from Copenhagen for continued treatment.

Other state hospitals with approximate beds are at Bronderslav (400), Viborg (700-800), Aarhus University Clinic (700-800), Middelfart (500-600), Augustenborg (700-

800), Vester Vedsted (200-300), Oringe (600-700), and Nykobing Sjaelland (1000). Another (private) facility, Filadelfia, has approximately 470 beds for epilepsy 265 for psychiatry.

Dr. Einar Geert-Jorgensen, Head of the psychiatric department at Frederiksberg Municipal Hospital took me through his well organized department. With 140 beds. 20 of which are for senile patients and a staff of 7, nearly 2,000 patients are treated yearly, only 165 of whom are transferred to other hospitals for continued treatment. The facilities were uncrowded, clean and well equipped. Nurses and attendants impressed me as most courteous, friendly, and efficient. The department seemed to gain substantially from its integration as a major division in a general hospital. Shock was used liberally; in 1956 1,934 ECTs were given.

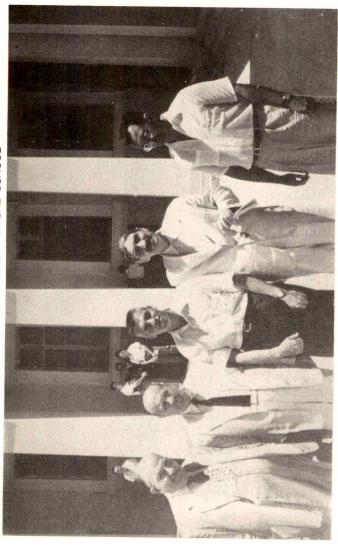
#### ITALY

Postwar Italy is a nation of 48 million people of whom about 4% live in the capital city of Rome. Neurology and psychiatry are closely tied together in Italian medical teaching, in clinics and in the private practice of medicine generally. Much of the current work in NP is organically and biologically oriented. Italian medicine historically has had its closest connections with German medicine. This is reflected in the language abilities of Italian physicians, with English running considerably behind both German and French. However, there are now an increasing number of Italian physicians in U.S. training programs in psychiatry. This trend is likely to gradually influence Italian medicine to some extent. Two specialists commented however, that Italian psychiatry today is most nearly comparable with the German psychiatry of around 50 years ago.

Medical interest generally in the existence of possible psychologic bases for the illnesses that we regard as emotional in origin or psychogenic is rather slight. With some noteworthy exceptions, there is likewise little interest in psychodynamics.

There are 1,000 to 1,200 psychiatrists in Italy, with varying qualifications. Some 300 are members of the Italian Society of Psychiatry whose recent president was Profes-

UNIVERSITY OF ATHENS MEDICAL SCHOOL



Prof. (Hygiene) and President of the Panhellenic Union of Mental Hygiene Gerassimos Alivisatos, Prof. (Histological Anatomy) and Dean Themistocles Sklavounos, Visiting Prof. Henry P. Laughlin, Prof. (Psy. and Neur.) and V.P. of the PUMH John S. Patrikios, and Prof. (Psy. and Neur.) and Sec'y-Gen. of the PUMH George Lyketsos.

sor Ugo Cerietti. The Italian Mental Hygiene Society was organized in 1924 and currently has 400 members. Its president, 🖎 Carlo De Sanctis, discussed with me the three major developments in Italian psychatry which he believed noteworthy since the survey, of which he was co-author (with Dr. Paul Lemkau) was published in the APA Journal in 1950(4). These were : 1. More work in child guidance, 2. An increase in outpatient facilities, and 3. A growth in mental health interest. In 1958 the first post-graduate course in child psychiatry was started—a 4-year program sponsored jointly by the Departments of Psychiatry and Pediatrics at the U.D.S. Medical School in Rome.

Dr. Mario Gozzano, professor of psychiatry at the *Universita Degli Studi* in Rome took us through his large university clinic. Here there are 180 teaching beds, to which new building has just added space for 70 patients. The medical students have their clinical training in psychiatry here. In their last year they receive instruction in psychiatry. The children's department under professor Giovanni Bolleo consists of 30 inpatients, an outpatient child guidance clinic in which 10 to 12 patients are seen daily, and a 30-patient daily "school" for cerebral palsy patients.

In a tour of the famous Provincial Psychiatric Hospital of Santa Maria Della Pieta outside Rome I saw in the library the most complete collection of psychiatric periodicals seen at any point of two world tours. This hospital with its 2,500 patients is not the largest in Italy, but it is certainly one of the best. Their patient discharge rate is 70%—most of them in the first 3 months. Also at this hospital is a useful statistical division which regularly undertakes the compilation and publication of national data on psychiatric hospitals and patients.

Another hospital for Rome accommodates some 700 chronic patients at Ceccano, 100 km. distant. Other large provincial hospitals are at Palermo (approximately 3,000 patients) and at Genoa (2 hospitals with approximately 3,200 patients).

The administrative management of psychiatric patients in Italy is on a provincial basis and accordingly each province has its psychiatric facilities. Details about these

have been published in Italy and elsewhere, and are available to those interested. Evidences of professional progress in Italy are present but scattered. There is much room for growth and improvement, and increased support from all quarters—official, medical, and the public is greatly needed

#### GREECE

Greece is an interesting and nospitable country of some 7½ million people, with 20% in the Athens-Piraeus area. Effects upon the country of the many years of war just past are inevitable. There are few Hellenes who do not carry poignant memories of World War II, the Nazi occupation and especially the desperate civil war that was only recently concluded.

Medicine in Greece has many ties to other European countries but particularly to France. While only a few physicians have an excellent command of English and some of German, far more can speak French fluently. An interpreter was accordingly necessary (for most of the audience) during a lecture which I gave at a medical meeting in Athens. Indicative of the joint action possible among medical groups in Greece, this meeting was co-sponsored by: 1. The Medical Society of Athens (3000 members), 2. The Neuropsychiatric Society of Athens (founded 1936, 100 members-Fresident, Professor (of Psychiatry) J. S. Patrikios), and 3. The Pan Hellenic Union of Mental Hygiene (founded 1956, 85 members—President, Professor Alivisatos).

There are two medical schools in this friendly nation, each with a 6-year program. At the University of Salonika the student enrollment runs from about 200 students in the first year to some 100 graduates in the sixth year. At the Fcculté de Medicine in Athens, Dean Themistocles Sklavounos told me that his enrollment varies from 400 students in the first year to 250 in the sixth. Of his entering freshman, half are from Greece proper while the balance are Hellenes from overseas who are admitted without examination. The B.M. degree is given after the clinical year; while an M.D. can be granted only later after an acceptable thesis and special examinations.

Of approximately 100 psychiatrists in Greece today, three-quarters are in greater

Athens, 10 in Salonika and 15 elsewhere. Most of them have trained in Greece. Those trained abroad have mostly been in France and Germany. This trend has been slowly changing and there are now 20 Hellenic physicians training in psychiatry in the U. S.(5).

Very few doctors do psychotherapy, fees for which generally run between \$4.00 and \$6.00 (U. S. equivalent) per consultation. Standards for medical fees and salaries generally are not high according to those of the American continent. The half-time daily pay for the Professor and Director of the University Department of Psychiatry for example was the equivalent of \$5.00.

Much of our psychiatric terminology has its origin in early Greek, and it was quite natural that I found some Hellenic psychiatrists sharing my own interests in psychiatric philology. A most recent example is that of ataraxy, defined as, "a state in which there is an absence of anxiety" (6). This term is derived from the Greek word ataraxia literally meaning "non-agitation." At times errors have occurred in the transposition and evolution of our terms. Dr. Demetrios Kouretas, the sole psychoanalyst in his country, pointed out that scopophilic is the correct form, not scoptophilic. He advocates a concept of the preego in place of the id.

The common problems of low budgets, need for more trained staff and increased beds are present. U. S. trained Dr. George Lyketsos, a Fellow of the APA and Director of Dromokaition Mental Hospital estimated that there are some 20,000 mental patients, of whom those actually hospitalized are crowded into half the required space. The budget for public supported patients runs

the equivalent of 70¢ per day; at the university clinic the rate is \$3.00 a day. Psychiatric staff members, except for residents, are part-time. In view of the fiscal and other handicaps, the achievements at Dromokaition Hospital are a special credit to its administration. I saw active O.T. programs, patients constructively occupied and subject to very few restrictions, and a generally therapeutic atmosphere.

#### SPAIN

Spain is less densely populated than other European countries, with some 26 million people, 7% of whom live in Madrid. While tourism is increasing rapidly, Spain is still less on the beaten track than most other European countries. Many living costs there are quite low.

Relatively few Spaniards, lay or professional, understand English. For Spanish physicians the number 2 language is French, and number 3 is German. Both Portuguese and Italian are understood widely and according to Dr. José Germain, Editor of a leading Spanish language psychological journal, either may be used for medical conferences. A trend toward greater understanding and use of English has developed only since World War II. The influence of German psychiatry is as great as in Italy, considerably greater than that of French or English psychiatry, but a little less so now than before the war. There are now almost 20 Spanish physicians in psychiatric training in America.

The Spanish Association of Neuropsychiatry numbers approximately 350 members and includes 90% or more of all Spanish psychiatrists. As we found in Greece, but somewhat less extensively, many psychiatrists

TABLE 1
Mental Hospitals in Greece

Hospital	Patient Census	Psy. Staff	Residents
1. Aegimition, Un. of Athens	190 N. P.	5	2.
2. State Mental Hospital, Daphni (Athens)	2500 (1700 beds)	15	15
3. Dromokaition Mental Hospital, Chaidari (Athens)	900	8	7
4. State Mental Hospital, Un. of Salonika	300	3	4
5. State Mental Hospital, Corfu	500	2	4

In addition there are state mental hospitals at Chania on the island of Crete, and at Cephanlonia, each with a few patients, poor facilities and perhaps one psychiatrist.

hold part-time official positions or appointments at various clinics or institutions. We visited Dr. Juan José Ibor at his busy and attractive private offices. Dr. Ibor, who also directs the female side of the psychiatric clinic at the University of Madrid Hospital, is quite familiar with recent work in American psychiatry. There is a fair amount of private practice and of psychotherapy done in Madrid.

There are 10 major universities in Spain, each with a Faculty of Medicine. Each currently has a Professor of Psychiatry or is scheduled to have one at an early date. Since 1946, all students in medicine must have some psychiatry. Usually this is a lecture course with a view of clinical work, lasting 2 to 3 hours a week. No psychiatry is taught in the lower years, and students have the opportunity to receive instruction in psychiatry in their senior year. Dean Jesus Garcia Orcoyan of the Universidad de Madrid, Facultad de Medicina, whose school is by far the largest of the 10 faculties, told us that there are currently 1,142 first year medical students in the 10 faculies; of whom 37% are in his school.

It would appear that hospital facilities for the mentally ill are insufficient according to our standards. The University of Madrid maintains an outpatient clinic and provides brief hospitalization for a limited number of selected cases, as do a few other general hospitals. Two privately sponsored mental hospitals at Cienpozuolos are run by religious groups and accommodate over

1000 male and 1000 female patients respectively. Two government hospitals are worthy of note: one near Madrid has 400 to 500 patients, one at Saragossa has had a program of O. T., reported to be continuously operative since the 15th century.

#### TURKEY

The founding of the Turkish Neuropsychiatric Society in 1916 marked the beginning of modern Turkish psychiatry. My friendly and generous host, Dr. Ihsan Sukru Aksel, Head of the psychiatric department at the University of Istanbul and President of the Society in 1957, reported that there are now some 200 full members. In 1923 a national Board of Psychiatry was established. It is now considered obligatory for a psychiatrist to pass the Board examinations after 3 years of graduate training, one of which must be in neurology. Some 350 physicians have secured Board certification.

Much of medicine together with most of the psychiatric work in this nation of 24,000,000 people is concentrated in and around the 3 major cities; Istanbul (population 1,500,000), Izmir (600,000), and Ankara, the capital (500,000). Of note is the fact that from 1949 to 1958 the Governor-Mayor of Istanbul was Dr. Fahreddin Derim Gökay, a neuropsychiatrist also well known in America. A former professor at the University of Istanbul, Dr. Gökay is currently his nation's ambassador at Geneva.

In the above hospitals 1,200 new inpa-

### TABLE 2 Psychiatric Hospital Facilities in Turkey\*

	Hospital ·	Location	Auspices	Patient Ceasus	Staff Physicians
	<ol> <li>TIB Fakultesi</li> </ol>	Istanbul	University of Istanl	bul 100	12
	2. Medical School	Ankara	University of Ankara	. 60	12
	3. Bikirköy	Istanbul (8 mi. west)	State	3500	30
٠,	4. Manisa	Near Izmir	State	237	2
	5 Elazig	Eastern Anatolia	State	. 500	2
	6. Armenian Hospital	Istanbul	Beneficial	50	2
	7. Sisli Fransiz	Istanbul	Private	200	8
	Hastahanesi				
	8. Duman Klinigi	Istanbul	Private	_ 20	2
	<ol><li>Greek Hospital</li></ol>	Istanbul	Beneficial	50	2

<sup>\*</sup> Compilation made with the generous help of Professor I. S. Aksel and U. S. trained Dr. Kemal Elbirlik. (See also Reference 7.)

tients and 6,000 outpatients receive treatment each year. In 1957 a child guidance clinic was established in the University of Istanbul department of neuropsychiatry. Some intriguing research work was underway with mice, on the study of hereditary factors in tumors.

The medical profession in Turkey has had fairly close ties with Europe; especially with medicine in Germany and Austria. Many physicians have a good command of German, some of French and a few of English. In psychiatry, there is an active and growing interest in post-graduate training in America constantly handicapped however by such problems as those of unfavorable monetary exchange rates and currency export restrictions. Nonetheless there are over 30 Turkish graduates currently in

graduate training pragrams in psychiatry in the U. S. A.(5).

#### BIBLIOGRAPHY

- 1. Laughlin, H. P.: Am. J. Psychiat., 115: 193, Sept. 1958.
- 2. Laughlin, Henry P.: A Psychiatrist Reports On . . . India: Land of Medical Challenge. Montgomery County Medical Bulletin, 3: 2, Feb. 1959.
- 3. Laughlin, Henry P.: The Neuroses in Clinical Practice. Phila. and London: W. B. Saunders Co., 567, 1956.
- 4. Lemkau, Paul V., and De Sanctis, Carlo: Am. J. Psychiat. 107: 401, Dec. 1950.
- 5. Training in U. S. Psychiatric Training Centers, August 1956; Fact Sheet No. 3, Aug. 1957.
  - 6. Laughlin, H. P.: op. cit., 698.
- 7. Sivadon, Paul: Report on a Mission to Turkey. World Federation for Mental Health (Report, Mimeo. pp. 21 and pp. 23), 1956.

#### THE NEW MENTAL HEALTH ACT IN ENGLAND AND WALES

W. S. MACLAY<sup>1</sup>

The new Mental Health Act is the first fundamental revision of the English mental health laws since 1845 when the two Bills introduced by Lord Shaftesbury created the system on which all later additions have been based. It was introduced in the House of Commons on December 17, 1958 and received the Royal Assent in July, 1959. The final appointed day for its implementation will presumably be some time in 1960, but in the meantime much can be done stage by stage.

The Act follows closely the recommendations of the Royal Commission on the Law Relating to Mental Illness and Mental Deficiency which reported in 1957. The Report itself followed in spirit the trends in psychiatry which have been becoming evident in Britain over recent years and many of its recommendations can be and are being put into effect at the present time. The New Act will enable those recommendations which require fresh legislation to be implemented as well. It is seldom that a new Act follows so closely on a report by a Royal Commission.

The Act clears away a mass of confusing legislation including the Lunacy and Mental Treatment Acts, 1890-1930 and the Mental Deficiency Acts, 1913-1938. In all it repeals 15 Acts in their entirety and 37 Acts in part. It is no wonder that it is lengthy, containing 9 parts, 154 sections and 8 schedules.

#### LOCAL AUTHORITY SERVICES

The National Health Service has 3 main divisions: 1. The Hospital and Specialist Services, 2. The Local Authority Services in the Community, and 3. The General Practitioner Services.

The Royal Commission recommended a general reorientation in the care of mental patients away from care in hospitals towards care in the community. They mentioned in particular the need for: 1. Residential hostels or homes for subnormal pa-

<sup>1</sup> Medical Senior Commissioner of the Board of Control, Ministry of Health Bldg., Savile Row, London, W. 1, Eng.

tients who either need not go into hospital or who could leave it if they had somewhere to live with some degree of supervision; 2. Industrial and occupational centres for those who are not and may never be ble of normal employment; 3. centres for all children exclude school who can benefit from trains Homes for old people suffering from ma infirmity; 5. More social work and after care for patients discharged from hospital. The Commission recommended that the provision of these services should be a duty on local health authorities. Clearly all this meant a great extension of local authority work and would require both money and staff. When the Bill did not make these services mandatory as recommended in the Report there was much criticism based on the assumption that the services of the local authority would be permissive and might not be provided, but the Minister made it clear in Parliament that he did in fact intend to make the services compulsory by using machinery already provided in the 1946 National Health Service Act. This method is consistent with the policy of integrating mental health services into the National Health Service and gives greater flexibility by permitting a phased programme which can take into account availability of staff as well as of money. Already meetings between the Ministry and the local authorities have taken place to discuss what can be done. There is little evidence of unwillingness but much anxiety about ways and means.

There is no doubt that the expansion of the mental health services in the community and especially the part to be played by the local authorities is one of the most important changes taking place in England now, so it is, perhaps, permissible to say a little more about the local authority developments already mentioned.

Locally, there will be consultations between the officers of the mental and mental deficiency hospitals and those of the local authority, for instance, about the hostels. Some hospitals have good hostels of their own and it is not always easy to decide whether a patient needs hostel care under medical supervision supplied by the Hospital Service or is fit for community life. As yet there are very few local authority hostels for mentally disordered people. Probably both kinds are needed.

Industrial and occupational centres have good deal of attention in recent years.

The over 40 of them for adults and likely to be provided. Whether ho work in them will go on to imployment depends partly on the cind willingness of local employers work to them. There is an obligation the Disabled Persons Act to employ that of disabled persons but the employer may prefer the physically disabled to the mentally disabled.

Training centres for children, hitherto known as occupation centres for mental defectives, are on a very different footing. They were initiated some 40 years ago by voluntary effort. The centres are now a local health authority responsibility and there are some 310 of them. Though doubtless more will be provided, the first new effort is likely to be the provision of residential accommodation at or near training centres for children living far from a centre and only partly catered for by the visits of a home teacher.

Old people suffering from mental disorder may need to use the hospital services, either as full mental hospital care and treatment, or in the form of simpler psychiatric supervision and nursing in separate psychogeriatric hospital units. It is those who do not need specialist treatment and who are comparatively easy to manage, who will go to the homes provided by the local health authority for old people who are mentally infirm. Free interchange of opinion between general practitioner, geriatrician and psychiatrist will be as necessary as free movement of old patients between one hospital or home and another, according to their needs.

The present situation of social work and after-care is very complex. These services are still far short of what is desirable. Nevertheless they have developed to a considerable extent in different areas. The importance of the role, however, adopted by

the family doctor, the local authority and the hospital varies widely from place to place. Workers in this sphere may have had full psychiatric social work training, health visitor training, training in administration, training simply by experience, or no training at all. Into social work generally the report of the "Younghusband Committee," i.e. the Working Party on Social Workers in the Local Authority Health and Welfare Services, has thrown much light, but the improvement in mental health social work which is so much needed is likely to be empirical for some time yet because the big changes recommended by the Report cannot come quickly.

### DESIGNATION OF MENTAL AND MENTAL DEFICIENCY HOSPITALS

The changes proposed in the new Act are designed to enable patients suffering from any form of mental disorder to be treated as far as possible in the same way as people suffering from physical disabilities and to encourage them to seek treatment promptly and voluntarily, but at the same time to ensure that there are adequate restraints and safeguards where patients in their own interests or for the sake of others must be compulsorily admitted to hospital and detained.

One way in which the Act helps to achieve this is by abolishing the statutory designation of mental, and mental deficiency, hospitals and by removing the formalities at present attached even to "voluntary admission" for mental treatment. These measures have been widely welcomed and mean that any suitable hospital is free to admit mentally disordered patients. Specialised psychiatric hospitals will, of course, still be needed but there will be more opportunity for better classification and psychiatric wings or wards in or attached to general hospitals will become more common.

It was possible to start informal admissions to mental deficiency hospitals in 1958 under the existing laws. Already over 27,000 of the 60,000 in residence are on the same footing as any other hospital patient and about 70% of the new patients admitted in 1958 entered informally. Now that the new Act is passed it will be possible to

start the same procedure for those in residence in mental hospitals.

### CLASSIFICATION OF PATIENTS AND COMPULSORY DETENTION

The single term "mental disorder" is introduced to cover all forms of mental illness or disability. Provision for compulsory detention recognises 4 groups of mentally disordered patients, 1. Mentally ill, 2. Severely subnormal, 3. Subnormal, and 4. Psychopathic. These categories are mentioned and the last three defined in section 4, which is set out in full for the sake of clarity:

(1) In this Act 'mental disorder' means mental illness, arrested or incomplete development of mind, psychopathic disorder, and any other disorder or disability of mind; and 'mentally disordered' shall be construed accordingly.

(2) In this Act 'severe subnormality' means a state of arrested or incomplete development of mind which includes subnormality of intelligence and is of such a nature or degree that the patient is incapable of living an independent life, or will be so incapable when of an age to do so.

(3) In this Act 'subnormality' means a state of arrested or incomplete development of mind (not amounting to severe subnormality) which includes subnormality of intelligence and is of a nature or degree which requires or is susceptible to medical treatment or other special

care or training of the patient.

(4) In this Act 'psychopathic disorder' means a persistent disorder of mind (whether or not accompanied by subnormality of intelligence) which results in abnormally aggressive or seriously irresponsible conduct on the part of the patient, and requires or is susceptible to medical treatment.

(5) Nothing in this section shall be construed as implying that a person may be dealt with under this Act as suffering from mental disorder, or from any form of mental disorder described in this section, by reason only of promiscuity or other immoral conduct.

• It will be noted that "mental illness" is not defined. In the sections in part 4 dealing with compulsory detention, when qualified by the phrase "of a quality or degree which warrants the detention of the patient in a hospital for medical treatment," it is intended to cover the same range of illness as was covered in the Lunacy Acts by the

:,.

words—"person of unsound mind and a proper person to be detained for care and treatment." This latter phrase has never been more precisely defined but by medical tradition it has been narrowly interpreted and there is no evidence that it has been abused.

"Psychopathic disorder" was not defined in the Report of the Royal Commission but has been defined in the Act and the definition has led to much discussion. This is hardly surprising when one remembers the mass of vague, contradictory, confusing literature about the subject. Despite frequent reference to "fools rushing in where angels fear to tread" it is believed that the bravery of those who drew up the definition is justified. The definition approximates to the common use of the term and from the legal point of view seems likely to be workable. There have been criticisms of the words "requires or is susceptible to medical treatment" because some psychiatrists held that psychopaths do not respond to treatment but the inclusion of these words is intended as a safeguard to make sure that persons are not compulsorily admitted to hospital unless it is thought that their condition does require medical treatment. It should be noted that by deficition "medical treatment includes nursing, and also includes care and training under medical supervision."

#### COMPULSORY ADMISSION

It seems necessary at this point to state that most of the substance of the Act is taken up with measures which need only be applied to comparatively small numbers of patients. For example, 69 of the 154 sections in the whole Act are cevoted to compulsory measures for unwilling patients and those concerned in criminal proceedings, but in 1958 over 85% of those who entered mental hospitals and over 70% of those admitted to mental deficiency hospitals were admitted on a voluntary basis and it is presumed that the great majority of those in residence will not require compulsory measures. Compulsory measures should be considered in the light of these facts.

Part IV of the Act defines the circumstances in which patients may be compelled to enter hospital. There are 3 main procedures:

- 1. Admission for observation (section 25).
- 2. Admission for treatment (section 26).
- 3. Emergency admission for observation (section 29).

These provide a single set of procedures which apply to patients in each of the 4 groups—mentally ill, severely subnormal, subnormal and psychopathic—in place of the variety of separate procedures used at present. Section 26 does not apply to subnormal or psychopathic patients over 21; patients in these groups who are over the age of 21 cannot be compulsorily detained except for a period of observation unless they have been convicted of some crime.

In each case of compulsory detention in addition to the diagnosis of mental disorder, there must be a statement that detention is necessary in the interest of the patient's health or safety or for the protection of others. Doctors giving recommendations for compulsory detention must record the grounds for their opinion that the conditions are fulfilled and state whether alternative methods of dealing with the patient are available and, if so, why they are not appropriate. This is intended to exclude the use of compulsory procedures if the patient could equally well be treated as an outpatient or as an inpatient without compulsion.

#### JUDICIAL AUTHORITY

In the past the Acts required an order from a justice of the peace before compulsory admission to or detention in hospital. The most commonly used procedure, i.e. Summary Reception Order, needed in addition one and only one medical certificate from a medical practitioner. There has long been a view that the magistrate's order is not an effective safeguard because he cannot form any sound independent opinion on the patient's mental state and because the judicial order links "certification" with the courts and the punishment of crime. The new Act abolishes the judicial order but requires two medical opinions including one from a doctor of special experience. There has been some criticism of the abolition of the judicial order particularly by those doctors who feel that it may damage the relationship between them and their patients if the main responsibility for rec-

1

ommending compulsory detention in hospital is clearly seen to fall on them. The great majority of the profession, however, welcome the change. They feel that the assessment of the patient's mental condition and of his need for treatment, which is the essential basis for action, is a matter of medical judgment and that it is no advantage to the patient and little to the doctor if the doctor shelters behind a magistrate. A far better safeguard is the requirement for two medical opinions, one of which is by an expert.

### AGE LIMITS FOR DETENTION OF SUBNORMAL AND PSYCHOPATHIC PATIENTS

The Act lays down that subnormal and psychopathic patients should not be compulsorily admitted to hospital over the age of 21 except for a short period of observation or after conviction in the courts. They are liable to compulsory admission under the age of 21 years, but, unless admitted through the courts or considered dangerous should not be detained beyond the age of 25. There has been a lot of misunderstanding and criticism of these age limits. It has been said, for instance, that they are not appropriate for subnormal patients because they may need care and protection beyond the age of 25. But care and treatment will be available to all such patients, at any ages informally without compulsion, if they wish it. The Royal Commission recommended strongly that patients who are only mildly subnormal and do not fall into the severely subnormal class should not be detained against their will unless their behaviour brings them into conflict with the criminal law. Anything else would mean too great an interference with personal liberty. Patients whose mental subnormality makes them quite incapable of an independent life will fall under the definition of "severely subnormal" and may be detained for as long as is necessary. The severely subnormal group will include many of those classified in the past as feebleminded, as well as the lower-grade patients classified as idiot and imbecile. Clearly there may be some difficulties in borderline cases.

#### SAFEGUARDS

 There are 4 main elements in the system of safeguards for the patients. First there are the safeguards provided in the admission procedures. Secondly, there are the time limits of the powers of detention. Thirdly, the power of discharge by relatives. Fourthly, there are the new Mental Health Review Tribunals with powers of discharge, to which patients and their relatives have access. There will be one Tribunal for each of the 15 hospital regions. The members in each region will be drawn from 3 panels, one of legal members, one of medical members and one of other members with relevant experience. At least one from each panel will sit together when applications are considered. The extent to which these Tribunals will be used and their exact procedure remain to be seen.

#### BOARD OF CONTROL

The setting up of Review Tribunals and the transfer of other duties to the Ministry of Health has made it possible to dissolve the Board of Control as advocated by its own members in their evidence to the Royal Commission. Its dissolution is in accord with the requirements of changing circumstances, particularly the integration of the mental with the other health services, but many are sorry to see it go and there have been many tributes to its work over the years in improving the mental health services before Cinderella became a Princess.

#### ADMINISTRATION IN PSYCHIATRIC HOSPITALS

The Mental Health Act has once again focussed attention on the question of medical administration in mental hospitals and

particularly on the role of the medical superintendent in relation to other consultants on the one hand and to the lay administrators on the other. Under the <u>lew</u> Act the legal obligation to appoint a medical superintendent who is chief officer of the hospital ceases and there is no doubt that the powers of the "responsible medical officer" referred to in section 47 for purposes of discharge or other purposes will not be vested only in the medical superintendent. This, however, does not necessarily mean that there is no need for a medical superintendent or some other form of medical administration. Everyone agrees that the days of the autocratic superintendent have gone and that consultants should have complete clinical responsibility for their catients, but hospitals must not lightly be deprived of the kind of leadership they need and from which many have benefited in the past. There is need for much thought to be given to the problem of what is best for patients and for the hospital as a whole.

#### Conclusion

The new Act has received a warm welcome throughout the country. One reason for this is the change in public attitude. Mental disorder is much more reasonably tolerated than was the case 50 years ago and this has made many cld restrictions unnecessary and undesirable. The new Act makes it possible to stop enforcing them and makes legal procedure less complex and cumbersome. It shows a hopeful confidence in doctors, administrators and ir an enlightened public. In this article an attempt has been made to describe some of the Act's more important features and the discussion which they have raised.

#### JOINT COMMISSION ON MENTAL ILLNESS AND HEALTH<sup>1</sup>

## JACK R. EWALT, M.D.,<sup>2</sup> MORRIS S. SCHWARTZ, Ph.D.,<sup>3</sup> KENNETH E. APPEL, M.D.,<sup>4</sup> LEO H. BARTEMEIER, M.D.,<sup>5</sup> AND CHARLES SCHLAIFER

When asked to design a survey of the mental health resources of the nation and to make recommendations for future plans. the commission and its staff decided to orient the study around individuals rather than around various professional groups and services. We wished to find out what people do when they become unhappy, worried, mentally ill, or otherwise troubled. We believed that people seeking aid for problems would go to some type of organized helping agency, either the medical profession, a hospital, a clinic, or a social agency. We also believed that a substantial number would turn to their clergymen for help. A similar line of reasoning led us to believe that people seek to improve their general well being by use of various recreational and educational facilities.

Obviously, we needed to determine the available manpower to supply these services. We also wanted to determine the advances being made in the research field, and to study factors that might interfere with development of research programs. Finally we wanted to establish methods of determining the financial cost of mental illness.

Space does not permit presentation of all the material regarding organization and findings that will be published in 11 monographs, but selected areas will be discussed.

We asked the Survey Research Center at the University of Michigan to determine by sample survey what makes people unhappy, and what agencies, or persons, render aid. The Survey Research Center staff headed by Angus Campbell and Gerald Gurin, working with our staff, developed a schedule of questions. The testing of the questionnaires was done carefully, and the

interviewers were especially trained in handling this particular study. The Joint Commission is very pleased with the way the study was managed.

Obviously, the material obtained reflects only those aspects of mental attitudes and feelings that are measurable in an interview; it represents a sample of the American population, including their satisfactions and dissatisfactions, things which concern them, and the resources and strength they bring to bear on these problems. This study reveals that people of different socio-economic groups and of different education differ in the satisfactions they achieve and the problems which they experience in life. This will be useful in planning mental health services for various population groups. The study revealed that people who seek help for personal problems tend to have a psychological orientation to life; that is, they are introspective and selfquestioning. People with a psychological orientation tended to have psychological rather than physical symptoms as a response to their stress. The expression of psychological orientations to problems was present in highest percentage in women, younger people and the better educated. These same groups were the ones most ready to refer themselves to professional sources for help.

Of tactical significance is the information about sources of happiness, unhappiness, and worry. The major national issues, the international situation, the threat of atomic fallout, the housing shortage, high taxes, inflation and crowded highways (reputed causes of great tension and stress) appeared to be an important source of worry to few people. Satisfactions derive from rather mundane things, income, families, children, and community activities. Correspondingly, worries are concerned with health, families, children, money, job situations and the everyday personal tribulations with which people are faced.

The information that people worry over

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> 74 Fenwood Rd., Boston 8, Mass.

<sup>3 105</sup> Channing Rd., Watertown 72, Mass.

<sup>4 111</sup> N. 49th St., Philadelphia 39, Pa.

<sup>5 6420</sup> Reisterstown Rd., Baltimore 15, Md.

rather personal matters is in a way enouraging. The national trend toward improving community services for persons under personal or economical stress by improving general health services, job security, economic security for people out of work, plus our declining death rate, especially in children, is directed toward the major reasons given as causes of unhappiness and worry by the sample population.

Another important fact emerging from this study is that people who define their problems in psychological terms make up approximately one-fifth of the population. At least one-fifth of the population answered the question, "Have you ever felt you were going to have a nervous breakdown?" in the affirmative. Only 4% of the total sample felt the causes of their problems to be external to themselves. About 10% of the total population felt that the problem was within themselves, and they would have benefited from professional help. About 14% of the people interviewed had sought professional help. In seeking help people tend to go to their clergymen, to their family doctor and to the psychiatrist in that order of frequency.

The actual number who state that they have sought psychiatric aid is surprisingly large when one considers the small number of psychiatrists, and the percentage of them concentrated in large cities. There are about 350,000 clergymen and 150,000 physicians available, fairly well distributed throughout the country in cities and rural areas. In contrast, there are at most 10 to 15 thousand psychiatrists; it is amazing that more than 2,000,000 people in this country have consulted psychiatrists because they thought they were going to have a nervous breakdown. On the basis of numbers, the rate of clergical consultation should be 20 times, and general medical consultation at least 10 times the rate of psychiatric consultation. In fact, the ratio runs approximately 4 to 1 and 2½ to 1.

The socio-economic status of the individual seems to play an important part in determining whether or not he defines his problems in psychological terms. But within groups persons with marital problems tend to consult a clergyman, a general physician, or a marriage counselor. On the

other hand, people with problems of child guidance, or with personal adjustment problems, which they interpret as psychological, more often consult with a psychiatrist. Most people voluntarily choose the kind of help they seek, but about 8% are referred by their physicians, and another 8% by families and friends. Only 1% soughhelp because of something they read or heard in some of the mass media, and about 1% were referred by the clergy.

This phase of the study has two important implications:

- 1. Current efforts to aid the clergy and the family physicians to become competent to offer counseling to the mentally disturbed serve an important function, since we know that people are already consulting these persons in large numbers.
- 2. We know that people are ready to consult psychiatrists and apparently do so in relatively large numbers in spite of poor distribution.

Our expectations of having any large increase in the number of psychiatrists available in the immediate future is poor indeed; therefore, we must expedite training, and most particularly assure optimum use of currently available manpower.

The size of the mental health problem will vary with the definition of mental illness. In any case, we can estimate the patients who actually seek psychiatric care. On an average day there are approximately 640,000 patients hospitalized with a mental disorder; if one includes the mentally retarded, the number rises to more than 700,000 persons. These people are cared for in the 1,250 hospitals that accept mentally ill persons for diagnosis and treatment. About 85% of these patients are found in large state hospitals, most of which have 500 or more beds. About 430,000 different patients are admitted to the non-federal psychiatric facilities each year, 270,000 of these to the specialized mental hospitals, and the remaining 160,000 to the psychiatric units in general hospitals. The admissions, plus patients already there at the first of any year, bring the total number of persons hospitalized in a year to 1,070,000. Approximately 30% of the patients admitted in any year have been hospitalized at least once before for mental illness. One-third of the admissions to all public and private mental hospitals are 55 years of age or older, and many state hospitals of the larger type report that a third or more of their patients are 65 or older on admission.

The general use of psychiatric resources can be summarized in terms of the total ospital facilities. There are 6,818 registered hospitals in the country, of which 7% are psychiatric. These 6,818 hospitals have 1,558,691 beds, of which 45% are psychiatric. The average census of all the hospitals on any day is 1,300,000, and of these patients 51% are psychiatric. On the other hand, of the 23,000,000 admissions in a year, only 2% are psychiatric, and of the 1,400,000 personnel in all categories hired by the 6,800 hospitals only 17% are employed in psychiatric hospitals. Thus, as we well know, our mental hospitals are large, overcrowded, understaffed and have many long term patients.

In addition, we estimate that the mental health clinics of all types treat at least 380,000 patients in a year, and that psychiatrists treat somewhere around 400,000 (give or take 30,000) in their offices. It is estimated that the number of psychiatric patients attended by internists and general practitioners varies from 10 to 50%.

There have been many attempts to count the mentally ill in the community, apparently, the more intensive the survey of the community, the larger the number of patients discovered. The prevalence figures in these surveys give a rate in the United States varying from 44 per thousand to 213 per thousand. The Michigan material, which is in no sense a prevalence survey, found more than two million persons who say they sought psychiatric help at some time; these figures do not include patients in hospitals, or persons in the armed forces. On the basis of the epidemiologic studies done, one may estimate that about 10% of our population have nervous or mental illness of sufficient severity to warrant appropriate treatment. This would mean 17,500,000 now in the nation. Our estimates show that 1,800,000 are treated in medical agencies in a year, or approximately 10% of the potential crop. In terms of adequacy of these treatment resources, we have found no community which believed it had

enough hospital beds for the mentally ill, enough clinics to take care of the mental health problems known to exist, or enough psychiatrists to care for the people wishing psychiatric care.

Dr. George Albee made an exhaustive study of the manpower problem of psychiatrists, psychologists, social workers and nurses. His results can be summarized in one statement. We do not have enough trained individuals nor are enough persons entering universities with an interest in this field so that we can expect adequate numbers in the foreseeable future. This can only mean that we will ultimately fail in our attempts to supply needed services using techniques based on our present knowledge of the cause and treatment of mental illness. One can conclude that we should at this time withdraw some money and some manpower from the support of treatment services (with full realization that this means further neglect of already poorly cared for patients) and use the competent manpower and money for research on causes and more effective treatment of mental illness.

Morris Schwartz and his co-workers have focussed their attention primarily on the new trends in the field, using conventional treatment systems as a background against which to analyze these new trends. They have observed programs, talked with experts, and reviewed the current literature on hospital and community patterns of care.

The effort to give immediate treatment in the community to mentally disturbed patients is one trend in which Schwartz is interested.

The hiatus, between the time a person becomes mentally ill and the time he receives professional treatment, has, for a long time, concerned practitioners. The long waiting lists for treatment have led to new programs, some which have concentrated on providing emergency psychiatric care while the patient stays in the community. They have attempted, either by home visiting by a psychiatric team, or by having a psychiatrist on call at all times in the psychiatric section of a general hospital, to narrow the time interval between the acute eruption of mental illness and the giving of professional help. The details of how

these programs can be most effectively conducted are still in the process of development. However, the problems are quite clear; they concern how to reach the patient when he most needs help; how to keep him out of the hospital while he is getting help; and how to maximize the effectiveness of scarce professional time by initiating appropriate intervention at the most appropriate time. It is our impression that these programs of emergency care are "paying off" and our recommendation is that they be continued and extended, while at the same time their efficacy and the conditions of their success and failure are investigated.

Schwartz and his group have done a similar analysis of a number of other programs dealing with the community care of mental patients. Their report will discuss attempts to extend the outpatient treatment system into the community, into the courts, prisons, industry, the general hospital, the school, and a variety of social agencies. It will also discuss attempts to broaden the conception of treatment, where, for examples, families as a group are being treated, or consultation is being given to public health nurses to facilitate their handling of mental patients.

A large variety of new programs has been initiated in mental hospitals throughout the country. Some of these programs have emerged in the course of practitioners' attempts to develop therapeutic milieu in their hospitals. Thus, hospitals have changed their atmosphere by giving greater freedom to patients; they have changed the role of personnel and patients, and have afforded patients greater opportunities to make decisions about, and take responsibility for, their own lives; they have instituted many procedures oriented toward bringing lower echelon personnel into the decision-making process; they have freed communication between the different levels of staff; they have developed the conception that many types of personnel may be of therapeutic significance to the patient; and they have introduced novel ways in which the therapeutic potential of personnel is used. The issues practitioners have concerned themselves with in developing therapeutic milieu are related to the physical and social organization of the hospital. They are experimenting particularly with the re-definition of roles and role-relations in the hospital in order to maximize its therapeutic impact.

Schwartz and his group have studied in a similar fashion attempts to break down the barriers between the hospital and the community. Here such programs as the open hospital and the psychiatric section of the general hospital are discussed. In addition, they have described programs where the individualization of care for patients has been the focus of concern.

The final set of trends Schwartz and his co-workers analyze deal with methods of aftercare. These facilities include halfway houses, foster family care, sheltered workshops, vocational counseling, rehabilitation centers, social clubs, and public health nurses. Some programs concentrate on providing continuity of care through the same person, trying to ensure that the staff member who saw the patient in the hospital will also see him after he has been released. In each program the central issue is to continue care for the patient in a way that fits him.

Two other trends in aftercare are the grading of stress for ex-mental patients, and the tailoring of treatment for them. Programs of grading stress are concerned with developing optimum "pressures" on patients to facilitate their performance. Programs of tailoring treatment for ex-patients are oriented toward finding the particular rehabilitation activity most needed by a patient.

As a result of new treatments—chemical, psychological and social—changed attitudes of staff and the surrounding community, and probably other factors not detected, there has been a substantial reduction in the number of resident patients in the country's hospitals. The number of beds actually emptied by discharge of patients, plus the former annual increase in the population of mental hospitals, means an overall saving of several thousands of hospital beds.

Community mental health services have expanded in the past several years. A few states have laws which make it possible for the state and community to collaborate

in support of local mental services. Pilot programs made possible through grants-inaid from the National Institute of Mental Health played a very large role in demonstrating the effectiveness of these clinics and in subsidizing the states at the beginning. However, there seem to be other factors at work in the population not easily described. The demand for psychiatric and other mental health services in agencies previously not thought to require such professional help is growing apace. For example, psychological testing and assessments in industry are in great demand. Courts, prisons, juvenile agencies, social agencies, school systems and industries are requesting psychiatric services. Agencies once content with diagnostic services from psychiatrists and psychologists now demand treatment for their clientele. Furthermore, by treatment they often mean one-to-one, intensive psychotherapy, psychoanalysis, or at a very minimum intensive, psychoanalytically oriented group therapy. One state has more than 60 psychiatrists and psychologists giving intensive therapy to offenders at the court or prison level—this in addition to long time established traditional diagnostic services. Whatever the causes, these demands for mental health clinics and allied services are growing more rapidly than the manpower pool for staffing them.

The inauguration of new services is not always carefully planned. Some new services have been started without coordination and full use of existing services in the community. The desire to create new services often stems from a wish to do something about something, and the belief that a mental health clinic or counseling and guidance service will magically care for the social ills and unhappiness of a community. Fortunately, there is a growing tendency for communities to make a survey of their needs and rescurces before starting a new service. The importance of careful planning to utilize existing services to their maximum cannot be overemphasized. The demands for new services are growing more rapidly than the complement of personnel to operate them, and as a nation we are not gaining on our professional manpower shortage, but losing ground. There is a trend to develop mental health services in the community that are health promoting as well as therapeutic, and we believe this is a productive trend.

Many communities still lack the basic resources and agencies necessary for mental health promotion and the treatment of mentally ill persons. Reginald Robinson and his group made a statistical study of the 3,103 counties in the nation (exclusive of Alaska, Hawaii and Puerto Rico). Two thousand counties have no psychiatrists. Two thousand have no community family service societies, and 1,500 have no public child welfare services.

A site survey in a representative sample of the counties shows that where community services are lacking, some people are not able to obtain needed help. Most counties studied recognize the need for development of community services, and there is an encouraging trend to use of welfare workers, county health nurses and other agencies to help augment the services made available through mental health clinics and hospitals. In the more isolated areas the clergy and the family physicians may assume the major responsibility for mental health counseling, and the physicians treat the more seriously ill until they may be referred to a hospital or clinic.

Services for the communities now lacking them will require professional staffing. Dr. Albee's manpower report discusses the difficulty in enticing enough college students into the professional fields to supply our needs. Because of the critical problem of recruitment and distribution of psychiatrists, Daniel Blain has been making a more intensive study of the psychiatric manpower problem. The latest information available to me in rough draft form and, therefore, subject to correction by him, reveals that in August of 1958 there were 2,723 psychiatric residents in 245 training centers in this country. This is a gain of 30% (650 residents) over the number training in August, 1956. He reports an increase in the number of programs approved for 3 years' training in state hospitals, so that in 1958, 51% of state hospitals were approved for 3-year programs.

Of the 650 additional residents in training in 1958 as compared to 1956, 250 were

in state hospitals and 300 in university hospitals. The federal training centers, largely concentrated in veterans hospitals, were training only 15% of the total in 1958 as compared to 19% in 1956. This is a most discouraging trend and one that should be studied so that it may be reversed. There is a steady trend toward having larger numbers of residents in training in individual centers. The most rapid rate of increase in residents in training represents those from foreign medical schools, and this group represented 373 out of the total increase of 650 residents. Thus, more than 50% of the additional persons in psychiatric residencies are from foreign schools, and of the 2,723 physicians in training, 1,066 are from foreign schools. We do not know what proportion of these physicians will remain in the United States after they complete their training. There is also a spottiness in the recruitment of psychiatrists from the various medical schools. There are 77 United States medical schools represented among the persons serving psychiatric residencies, but 27 of these schools supplied 57% of all U. S. graduates in resident training. Most of the schools supplying large numbers of trainees were in the middle Atlantic and north east states.

The research programs in psychiatry and related fields are objects of special study by the Commission. At this time about all we can say is that there is an encouraging trend to more long-term support and to programatic type of support which should make it easier for people to carry on basic research.

The problem of recruiting research workers who must exist from one project application to another, with no assurance of renewal of grants, is a major handicap in recruitment of people into the research field. Furthermore, it will do little good to encourage the development of research institutes and elaborate research programs unless we train research workers. There is an increasing interest on the part of the NIMH and a few of the foundations in increasing the facilities for training research workers. The next step is to insure some type of reasonably on-going support for the research work these trainees will do.

and a support that has a reasonable degree of personal security.

Viewed in perspective, we are encouraged by the changes taking place, inspired by the vast areas of work yet to be done, and humble in our understanding of how little we really know about man's behavior, sick or well. We have studied representative areas of concern to mental health workers and have omitted others because of limits of time and money. From all this we may hope that there will be improvement in the use of available knowledge, but also particular efforts at intensifying the training of research workers and their long-term employment in mental health research.

#### DISCUSSION

Franklin G. Ebaugh, M.D. (Denver, Colo.).—To my knowledge, this is the first time that we in psychiatry have been so definitive in testing our operating policies, and seeking perspective on our necessarily integrated role in society. Specific efforts toward increasing the manpower supply, the efficient use of hospital facilities, the availability of mental health services, and the followup and "indirect care" of patients have been ingenious and effective. Now we stand on the threshold of putting into operation a long-term, organized program to "back up" and stabilize our previous emergency measures. The brilliant leadership and vision of Jack Ewalt and others of the Joint Commission is providing us with the foundation for achieving this result.

I am impressed with the sound methodology with which the study was designed. The proposed monographs reviewed by the paper just presented, suggest that we shall have a very clear idea about every aspect of community need, as well as the available mental health resources.

It is impossible to predict the contribution which the Commissions' first monograph on current concepts of positive mental health may make in providing a reference guide for our extended forays into the community. In my opinion these criteria, which combine both the individuals' definitions and the definitions of social adaptation are most valuable because of. their flexibility. The gestalt concept—the individual in terms of his particular motivations and environment—must be intrinsic to treatment which aims at comfortable social adjustment. Thus, the suggested criteria of attitudes toward the self; integration of functioning, autonomy, perception of reality, and environmental mastery encourage an "individualized" focus in treatment planning, at a theoretical level. The Michigan findings that people of different socio-economic and educational levels value different satisfactions make different demands, and respond to different kinds of stress support this "individualized" definition of mental health, at a practical level. Care must be taken in helping the individual help himself, rather than having these agencies promote further dependency; otherwise the mental health programs will defeat themselves.

In considering the implications of the information in this paper, we are gratified by the confirmation of many of our current ideas about the causes of people's worries. The everyday problems of health, child welfare, employment security, and personal adjustment are difficulties which in most cases are amenable to therapeutic assistance either through environment manipulation or changes in personal attitude. It is satisfying to know that social trends toward assisting and increasing the individual's securities in these areas seem to complement psychiatric resources for maintaining mental health in the community.

Much of the common sense meaning of these findings, and the way they confirm our daily clinical observations, derives from the Commission's decision to orient the study around individuals, rather than professional groups and services. This provides an "inside view," and a closer identification of viewpoint from which we can plan the broad mental health program.

Perhaps I take particular satisfaction in the manpower studies. As a result of our 1932 survey we warned about the need for fuller training of the general physician in psychiatry, and for increasing the number of psychiatric specialists. Now, the statistics in this study demonstrate that the general practitioner is the first source of help to which great numbers of people turn "in

time of trouble." His accessibility, and extensive background knowledge about his patients are great assets in aiding them with emotional problems. The general practitioner is therefore a major asset to the manpower supply, and one whose resources and talents should be used to the utmost.

It is somewhat remarkable that there seems to be a certain lack of psychological mindedness, even today, among the younger general practitioners and residents in the specialities. They give lip-service to psychiatry; however, some tend to avoid it even while in training. Perhaps this lies in their need to grasp a vast amount of medical knowledge in a short time; or in deficient preparation for psychiatric or psychological mindedness of their respective medical schools.

The same essential comments apply to the clergyman, to whose counselling large numbers of people entrust their emotional welfare. It would be interesting to know what position those individuals who first consult their clergyman occupy on the dimension of "psychological orientation" toward adjustment problems. I suspect that the clergyman has access to many individuals who do not easily consult a psychiatrist, at least in the early stages of illness, and that therefore his potential contribution to mental health may be doubly valuable.

Current statistics verify not only the readiness of patients to consult psychiatrists in numbers disproportionate to the supply, but also the efforts of individual psychiatrists to manage this overload. An attempt to facilitate efficient use of our time, through organized community planning will undoubtedly be beneficial to psychiatrists as well as to patients.

The necessity for research is emphasized in this project. In this respect, one can detect a heartening interest across the country, and in the increased availability of financial support of research.

The authors state that the trend toward development of new services is in a way compounding our manpower problems; one can assume, however, that we who have long beaten the drums for better mental health methods and facilities are partly responsible for this. If our manpower prob-

lems are now complicated by what we have always known we needed, we can nonetheless make use of increased potential services by an unprecedented amount of community organization, communication, and establishment of mutually accepting interprofessional relationships. Ours is the position of leadership over this sprawling mental health community, and it is my opinion that this study by the Joint Commission will give us the functional "knowhow" of better leadership than ever before.

Having been closely associated with community mental health problems for many years, I am interested not only in increasing the numbers of trained workers and the communication among those who are already available, but also in the use of the total community in a better integrated sense. The problem of "hiatus" between the time of acute onset of mental illness and treatment is one which I feel is basic to other problems, such as later social rehabilitation and a broadened treatment conception. Not only is the patient himself more amenable to treatment at the outset of illness, but he is subjected to less "postillness" stress if his employment, family, and other associations have not already been taxed to the limits of their resources. I also feel that the developing "psychological orientation" of the general population creates a society which more closely approaches a "therapeutic milieu" in terms of both prevention and rehabilitation.

In closing, I want to emphasize the indebtedness we feel to the officers of the Joint Commission for their invaluable leadership, and my confidence that rapid progress in national, state, and local organization for management of mental health problems will be forthcoming as a result of their efforts.

#### DISCUSSION

D. EWEN CAMERON, M.D. (Montreal, P. Q.).—It is somewhat difficult to discuss this paper since it is not clear whether it is the basic report of the Joint Commission or simply some notes on progress. However, it bears the names of the leading members of the Commission and is recorded in the program of the last annual meeting of the APA as reporting the findings of the Com-

mission and hence should properly receive our fullest scrutiny and consideration.

This report is based on by far the most comprehensive survey of the mental health resources of the nation hitherto carried out. It has been at once heavily financed and supported by a most imposing array of national organizations having interest in the mental health field ranging from the great to the tangential. The number and the diversity of advisers and consultants, central and field staffs, have been as eloquent a testimony to the great size of the enterprise as has been the wealth of publicity and the number of progress reports.

In seeking standards adequate to judge the quality of an undertaking of these dimensions, the discussant may well feel uncertain where to turn. Fortunately, those responsible have also supplied a measure. The earlier announcements, though not the later, stated that this was to be a "Flexner type" of report on the mental health resources of the nation.

Flexner's report was one of the great documents of American medicine. The rising supremacy of medical training in the North American continent springs from the profound scrutiny, the uncompromising criticism of this man. He had the courage to condemn to oblivion the shoddy and the third-rate. His vision set the great ideals and objectives of medical teaching for the next half-century.

When we turn to this report by the Joint Commission, we see that it—no less than the Flexner report—is a survey of the conditions of the times. At this point similarity ends. Where Flexner recorded his vigorous criticism, his intolerance of what he found amiss with medical education and, in particular, where he set up the guideposts which we still follow, the Commission in contrast appears merely to reflect what its members have been told. If there is a reported lack of personnel, the Commission is in favour of more personnel If there is dearth of research funds, the Commission is in favour of more money. If a considerable number of people go to the clergy for help with their problems, the Commission is in favour of adding the clergy to their team-this despite the deplorable record of clergy of all faiths with respect to the progress of medical science.

It is difficult to see any place in this report where the Commission offers firm and inspiring leadership and no place where it sets great ideals and objectives for the future. The members of the Commission are against a reduction of effort on the part of the Federal training centres and, in an almost vigorous statement, they declare that, since we do not have enough trained people and not enough are undertaking training, we shall ultimately fail in our attempts to supply needed services using techniques based on our present knowledge of the cause and treatment of

mental illness. But the rest of the paper disposes one to favour the belief that this is simply something that the Commission has been told.

A first-rate survey must be based on first-rate questions, and first-rate questions•in turn require a vigorous imagination supported by unsparing drive for excellence and an intolerance of the second-rate. The Commission, as it records itself in this paper, gives no leadership, no direction, no great objectives for the future. It is good only to the extent that it reports the vitality, the enthusiasm and the devotion to be found in hundreds of centres across the country.

#### MANPOWER STUDIES WITH SPECIAL REFERENCE TO PSYCHIATRISTS<sup>1</sup>

### DANIEL BLAIN, M.D.,<sup>2</sup> HOWARD POTTER, M.D.,<sup>3</sup> AND HARRY SOLOMON, M.D.<sup>4</sup>

#### THE SETTING

In 1956, stimulated by unfilled jobs and nationwide demand, the Office of the Medical Director of the APA, in Washington, issued the following statement:

The problems of personnel shortages in psychiatric services are so overwhelming, so well known, so frustrating that they seem to threaten the very possibility of progress. For lack of manpower whole programs lie in abeyance; clinical facilities are hopelessly overtaxed and some perforce are closed to new admissions; waiting lists are static; key positions, such as state commissionerships, superintendents of mental hospitals, directorships of psychiatric clinics and professorships stand vacant for months and even years. Research crying to be done awaits the scientist to carry it out. Teaching and supervision, the key ingredients of programs which will vastly expand our human resources are only sparsely available. The actual carrying out of preventive techniques is virtually a dream. Broad scale planning for the nation, state and community takes on an Alice-in-Wonderland atmosphere for there are no real people to fill the slots in the neat organization charts that we conjure. So much is done by so few and our efforts are so thinly spread that total efficiency is inevitably of a low order(1).

#### THE PLAN

In June 1958 authority was obtained from the Council of the APA to organize and seek funds for "A Manpower Project (Recruitment, Distribution and Utilization of Psychiatrists)" and on September 15 an agreement was reached with one of the authors to operate this project with a modest sum of money collected from private individuals and foundations. Consultants 5 were obtained, and tentative explorations were made under 6 headings:

recruitment into psychiatry, into the subspecialties of psychiatry, into large employment programs; geographical • maldistribution; utilization of psychiatrists; experimental placement in top positions.

After 8 months we have gained sufficient experience to make a report of observation, information collected, and outline a major study for the future.<sup>6</sup>

In this paper we shall refer to 1. The manpower problem in general with special reference to scientific and professional personnel; 2. The medical and general educational pools from which psychiatrists are drawn; 3. Present knowledge concerning psychiatry; 4. Subjective opinions from leading authorities.

1. The General Manpower Situation. We are indebted to Professor Eli Ginzberg and his associates in the Columbia University National Manpower Commission for a series of publications which form a major part of manpower studies of the last few years. Restricting ourselves chiedly to scientific and professional personnel, we can say that these have grown in number much faster than the population. Fifty years ago there were approximately one million scientific personnel in the scientific, professional and related fields. There are now approximately 5 million.

In spite of this, the demand for scientific and professional personnel has recently exceeded its availability. It was toward the end of World War II that scattered warnings of inadequate scientific manpower were first felt; and shortly after Korea, these shortages were recognized as of critical importance. Shortages of engineers, physicists and chemists were caused by a combination of expanded goods production

Francis Gerty, Eli Ginzburg, Carlyle Jacobson, Lawrence Kubie, Howard Potter, Harry Solomon, Sidney Spector, William B. Terhune.

<sup>6</sup> As of Nov. 1959, the Executive Committee authorized a special committee of Dr. David Wilson and Norman Brill to develop the design for future work of the project, since Dr. Blain had become Director of Mental Hygiene in California.

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1 1959.

<sup>&</sup>lt;sup>2</sup> Director of Mental Hygiene, Calif.

<sup>&</sup>lt;sup>3</sup> Director of Education, Letchworth Village, N. Y.

<sup>&</sup>lt;sup>4</sup> Commissioner of Mental Health, Mass.

<sup>&</sup>lt;sup>5</sup> George Albee, Kenneth Appel, Ward Darley,

and expanded defense; whereas other shortages, such as, nurses, teachers, rural doctors, psychiatrists and others in state hospitals, and competent administrators, have much longer histories and more complex causes.

The demand for physicians comes from higher standards of health and a growing national income. Limited capacity and higher requirements of medical schools have restricted the expansion of doctors. Gross uneven distribution has accentuated the discrepancy.

In general, shortages are the reflections of scientific discovery and technological change. Dr. Ginzberg and his associates comment, "The demand may fluctuate sharply in short run, but the size of supply will change slowly." The question arises, what methods can a democratic society utilize to insure a reasonable balance between supply and demand for manpower, since the factors influencing these are not amenable to direct control? The Nation can follow two broad courses of action: 1. Try to alter distribution of men and women so as to increase the number preparing for work in fields where short supply is anticipated; and 2. Expand the size of total college population so more will be educated and trained in each field.

There are undeveloped resources in the scientific and professional manpower field, summarized as follows:

Only one half of those who are capable are now entering college. Two-fifths of those who start college do not graduate. "Twenty-five of those who graduate have the ability to get doctors degrees, for everyone who actually gets such a degree.

Therefore, one may say there are 3 groups in reserve which perhaps could be tapped when the right formulae are developed: 1. High school graduates who do not enter college; 2. Those who start but do not graduate; 3. Graduates who do not pursue post graduate training.

And there is an additional hidden reserve,

Capable ones who get low scores because of deficiencies in early schooling. These are in poor communities which spend little on education. Particularly found among racial and ethnical minorities, many are handicapped by poor early education and later discrimination in employment.

It is quite obvious the supply of psychiatrists will be markedly affected by the general situation in scientific and professional manpower.

2. General Education and its potentialities. Psychiatrists as physicians come from the colleges and must compete with all professional and scientific manpower needs.

Albee in his excellent treatise for the Joint Commission on Mental Illness and Health about to be published has some potent remarks about the educational world. He says shortages in mental health professions do not exist in isolation—there is a widespread shortage of highly trained people in a variety of professional and technical areas. There seems to be a pervasive resistance to an allout educational effort by our country; resistant attitudes toward lengthy and difficult educational programs certainly affect recruitment into the mental health professions. Many educators feel(2),

The fundamental problem is a lack of appreciation or interest in intellectual achievement and the acquisition of knowledge which has grown up over a long period of time and which is reflected in our pervasive neglect of education plant, the low repute in which teaching is held, the lack of a ground swell of support for education in the face of crisis.

The Educational Testing Service in 1957 points out that many of the students now attending college are less intelligent than others not attending college and that, in general, we are losing a very large number of high ability students because of the lack of financial support for their education.

The paucity of the numbers of those who advance to positions of serious responsibility in the field of teaching, professional work and research is illustrated by the following:

Of 10,000 college graduates (bachelors and first professional degrees),

will obtain doctorate

	will obta	ın do
980	natural science	74.
200	psychology	12
1120	social science	24
1200	humanities	24
960	engineering	14
1340	business and commerce	e 2
1940	education	32
1030	all other fields	6
600	health fields	most

Time does not permit extension of these remarks in this very serious matter relating to our deficits in the field of total education, of which medicine and its specialty, psychiatry, must be a very important member.

3. Medical Graduates as a Pool from which Psychiatry is Derived. The pool of potential physicians is almost entirely restricted to those who at the end of their first year in college are interested enough in medicine to undertake premedical curricula.

Numerous estimates have been made about the shortage of physicians both now and in the future. The President's Committee on Health Needs of the Nation has stated that doctors by 1960 will be short by between 25 and 45,000, and 1960 is only one year away. Nurses will be short by 50,000. The United States has a lower number of persons per physician than any country in the world, but its distribution problems are serious. Howard Rusk in the New York Times has stated,

To maintain our present physician population ratios of one to 730 for the Nation, we will need by 1975 315,000 physicians. We now have approximately 225,000 and our current rate of increase is about 3,000 compared to a need for a current increase of around 5,250 per year.

It is a well-known fact that it will take approximately 8 to 10 years for any new medical school in the planning phase to be built, collect its faculty and graduate a class of seniors. There is some hope that a 10 or 15% in annual graduation can be obtained by an increase in two-year medical schools which will make up for the drop between the basic science two years and the two years of clinical medicine which now occurs and is responsible for considerable attrition.

3a. Shortages in Psychiatrists. There are approximately 13,000 physicians spending full time in psychiatry at this time. Somewhere between 40 and 50% of these are certified by the American Board in either psychiatry, or psychiatry and neurology. The number can only be increased by an increase in total number of physicians at present percentage or increasing the present percentage who go into psychiatry. Effort in

this direction runs counter to needs of other specialties and threatens to impair the present ratios. It would seem possible to justify an increase in view of the large preponderance of psychiatric patients and psychiatric needs and the need for consultations to cultural and welfare and chronic disease institutions, such as education, courts, industry, prisons. This will, however, require definitive studies.

The shortages of psychiatrists is related to the function of the psychiatrist, to the numbers that each individual psychiatrist actually do treat, and whether or not they select more difficult cases which demand great training and skill. It has been said, perhaps facetiously, that if the number of patients seen by the average psychiatrist in the United States could be doubled, it might be an equivalent to having twice as many psychiatrists.

One of the authors has mentioned 7 ways of better utilizing present available personnel. These are: 1. By redefining the functions of psychiatrists, general physicians, psychologists, nurses, social workers, and others; 2. By reassigning duties and responsibilities of these groups; 3. By delegating responsibilities from the more highly trained to the less highly trained with adequate supervision; 4. By modifying organizational structure and lines of authority to increase administrative efficiency; 5. By making greater use of social forces and persons from outside (volunteers) and groups to assist in treatment; 6. By increasing the skills of less highly trained personnel through a vastly increased inservice training; 7. By decreasing our reliance on residential treatment in favor of day hospital service with patients living at home, or in foster homes, or other simplified arrangements.

It is obvious that one would hope for research break-throughs which might simplify treatment processes, prevent large groups from needing treatment. This resource needs development to the extent that financial and other resources cirected toward research should parallel resources directed toward utilization of present knowledge (treatment).

One of the endeavors of the past year has been to bring up to date certain in-

<sup>&</sup>lt;sup>7</sup> Estimating APA membership at 85%.

formation related to physicians who are, at this time, residents in training in approved psychiatric training centers. This is a duplication of the study made in August 1956 and shows some remarkable changes which have occurred between that year and August 1958. Detailed analyses of these studies should be available shortly, but I can report here briefly. In 1956 there were 2,074 residents; in August 1958, 2,725, an increase of approximately 30% in two years. There has been an increase in the number of residents in each training institution in all states of the union except in two. The number of approved 3-year programs had increased in these two years by 30, 22 of which are in state hospitals. Of tremendous significance are the numbers in training in the United States who are graduates of foreign medical schools. In 1956, 30.2% of all residents came in this category. In 1958, this percentage had risen to 40% of all residents in training. The follow up of the 30% in 1956 showed that one half of these had already obtained citizenship; one quarter were intending to put in their naturalization papers. At that time the remaining quarter were intending to return to their own country. If one figures 70% of 2,074 as against 60% of 2,725, it shows a total cf 1,351 residents in 1956 who attended American medical schools had expanded to 1,635 in 1958, a gain of 174 American citizens. During these two years, there was also a change in the gross number of students who attended medical schools outside the United States. This number had grown to 1,090 in 1958, an absolute increase of 468. No follow-up has yet been made of the probability of this group of 622 staying in this country or returning to their own country.

The APA Manpower Project is engaged, with the help of the Association of American Medical Colleges, in a brief study of the applicants for residency training, which will develop information toward total and multiple applications, those who drop out of psychiatric training entirely and will provide an opportunity to study various groups in a more specialized way.

It is important to stress again the fact that the function of the psychiatrist in meeting the needs of citizens in the overall picture is obviously complementary to the efforts and activities of other groups with whom psychiatrists must work. It is also obvious to us all that faced with drastic shortages in the future, in case we are unsuccessful in increasing the number of those practising psychiatry and even though we alter their major function, may demand a serious reappraisal of ways and means of meeting the needs of the people in our general field, both of prevention and treatment as well as joining with others in the growth and development of health persons.

4. Subjective Impressions of Psychiatric Authorities. Tentative feelers on each of the 6 subjects considered in this exploratory year have been sent out to a selected list of 100 professors of psychiatry in the United States and Canada, committee chairmen of the APA and state medical societies, district branch offices. These staff memoranda are available in the office of the project for reference.

Responses have been spotty but will be helpful for future studies.

Comments concerning recruiting from persons in responsible positions in training of psychiatrists are of special interest.

It was suggested that placing a student early (perhaps in the first summer) in an investigative role under supervision of an older man who could furnish a stimulating "model" would be most helpful.

Some felt that full-time teachers were essential, and one dean emphasized the ability of a teacher to transmit enthusiasm.

Many felt that the job of the Department of Psychiatry was to give sound and interesting courses to all, some electives as well; there should be presented an overview of psychological and behavioral factors as these permeate health and disease. Some expressed it this way: best recruiting is done by creating a "climate of letting students fend for themselves"; let them "wait and see sick people and decide what interests them most."

One expressed his attitude toward successful recruiting as follows:

Recruitment will be best achieved by increasing the number of graduates exposed to psychiatric concepts, and by integrated teaching emphasizing the treatment potentials of psychiatry as rendering more effective the doctor-

patient relationship in all of medicine by altering the image of the successful psychiatrist from the analyst removed from the mainstream of medicine to the psychiatrist-physician by making the material taught show less evidence of discordance, conflict and uncertainty.

Others emphasized that the type of student selected might play a part in the number who choose psychiatry. It is of interest here to recall Parker's findings that "anti-authoritative students like best psychiatry, pediatrics and public health" (3); whereas "authoritarian" types preferred surgery, radiology, internal medicine.

Many felt psychiatric recruitment was deterred by rigidity of requirements to enter medical school, and furthered by admission committees dominated by basic science because psychiatrists are too busy to serve. Public psychiatry is notorious for low salaries and petty restrictions.

Where state hospitals present a "model" of psychiatric practices in some locales; in others, old school psychoanalysis represents all psychiatry, an extreme just as bad. Students and public feel "untreatable by psychoanalysis means untreatable by any form of psychiatric therapy," hence hopeless.

It was generally felt that more information on the graduates of medical schools who had gone into psychiatry would be useful. Changing faculty members in all departments was an important variable; changes of attitudes in the 4 years and specific deterrents should be studied.

A serious deterrent towards recruitment in general was suggested in the "confused social attitudes towards the mentally ill," and the fact that public hospitals were overloaded with social misfits, many belonging elsewhere.

A number of discrete topics for special studies were mentioned: studying a sample of residency programs; variety of needs in different localities, regions, states; the history of the psychiatric resident in college and before: his major interests, influential persons; define the area and clarify the need for which manpower is needed.

One person felt that psychiatry was doing as well as other specialties and a number agreed that in many schools those coming into psychiatry represented the top of the class.

5. Skeleton of a proposed study. The following represents an attempt to outline a research study which is restricted to a reasonable portion as it relates to psychiatrists.

#### MANPOWER PROJECT

PROPOSED AS BASE OF DETAILED AND COMPREHENSIVE DESIGN TO BE WORKED OUT OVER

A PERIOD OF 8-10 MONTHS

#### I. PURPOSE

To study and develop a concerted attack on shortages of psychiatrists.

The national demand for psychiatists is such that, with present treatment techniques, it is evident that there is and will continue to be a demand for a greater increase in the number of available psychiatrists.

Despite this widely heralded shortage of psychiatrists, there have been few studies of the dimensions of the shortage, the geographical distribution of psychiatrists, training resources, subspecialist distribution, patterns of utilization of psychiatric time and skills, or of techniques of recruitment. Of further importance is some understanding of the reasons certain medical schools consistently produce rather large numbers of psychiatrists. There is also the question of possible upper limits of specialization in psychiatry in view of the total number of medical school graduates.

During the past eight months, a few exploratory studies have been carried out by the American Psychiatric Association's Manpower Project study group and this would appear an opportune time for greater definition of study design.

It is proposed that the balance of this year be devoted to designing a study to accomplish the following:

A. Systematic compilation and analysis of objective data on

1. Psychiatrists in practice and training

2. Training resources

3. Factors influencing individuals to enter psychiatry

B. Identification of the current and projected demand for psychiatrists

jected demand for psychiatrists

C. The study and evaluation of techniques to increase the supply of psychiatrists.

This investigation will necessarily involve

a series of studies, each to supply information necessary for an understanding of the total psychiatric manpower picture.

### II. PROPOSED PROJECT OUTLINE (Tentative)

A. An analysis of the existing psychiatric manpower picture.

Collection and compilation of data
 on the existing manpower picture

a. In the United States

b. More intensively on a local basis. (e.g., in one state, one local and rural area)

2. Analysis and description of the existing picture

3. Identification of questions sug-

gested by these data

For the purpose of this study, a distinction is being made between demand for psychiatrists and need for psychiatrists. The size of the deficit in terms of need must await a careful study of those functions which necessitate the skills of a psychiatrist and the determination of the frequency with which they should be carried out. The present investigation will attempt to deal only with the concept of demand for psychiatrists. The need of these personnel, as previously defined, should be the subject of another study.

Psychiatrist is defined as a physician whose major time is devoted to psychiatric practice, teaching, research, or consultation, administration.

A logical starting point to the broader study of psychiatric manpower is that of examining closely the existing manpower picture.

Data are available from a variety of sources which when appropriately analyzed would yield a more complete picture of U. S. psychiatric manpower than has thus far been presented. Such areas as the following would be studied:

Age and age changes of the manpower pool; sources of supply and their variations; geographical distribution; mobility of psychiatry and directions of change; changes in the picture of foci of concentration; subspecialty distribution; and changes in the ratio between private practice and the variety of employed positions.

It appears desirable to approach this problem on a national, state, urban and a rural level. A clear understanding of national psychiatric manpower is necessary in order to ascertain characteristics of the total pool, as well as shifts within this pool. Furthermore, mobility among psychiatrists is such that state or local boundaries have relatively little significance. There is also an awareness that a rather limited number of training centers provides psychiatrists for the country as a whole and not solely for the areas in which these centers exist. The universe of psychiatrists in this country is sufficiently limited so as to permit a careful study of the total group. For this purpose, it is proposed to extend the American Psychiatric Association's Keysort punch card data to include a greater range of permanent data on all psychiatrists and to utilize IBM equipment so as to make the data more suitable for analysis.

It is apparent, however, that data for the country as a whole do not answer the important questions for an individual state, or for specific urban or rural areas. The variations between such loci are enormous in terms of psychiatric manpower and availability of training centers. Certain states, for example, do not have either a medical school or a psychiatric training center. Within a given state, there may be areas of very high and very low concentrations of psychiatrists, hence for any particular state a more detailed presentation is mandatory to assure an understanding of its manpower situation. Within any state variations may be great between rural and urban areas, each of which may have vastly different problems. A single state, as well as rural and urban area, might be chosen for study in this investigation, with the aim of furnishing models for the use of individual areas.

B. Techniques of increasing the supply of psychiatrists

1. Identification of possible techniques of increasing the supply of psychiatrists

a. Nationallyb. Locally

2. Evaluation of such techniques

It may be anticipated that analysis of the data relative to current psychiatric manpower will suggest a number of techniques for increasing the supply. In addition, a survey of the literature, a review of current practices in recruitment into psychiatry, and a canvassing of authorities for suggestions in this area will also yield other possible avenues on techniques for increasing the supply of psychiatrists. It

is proposed following such a compilation of techniques to make a careful analysis of their relative merit and effectiveness.

C. Future projects and studies

- 1. Studies indicated but not included in scope of original project. In considering what the scope of the proposed study should be, many areas of interest were excluded in order to narrow the investigation. As an example, the question of whether the time and skills of psychiatrists are currently being used to best advantage is not included, nor is there included an attempt to measure the effectiveness of present training
- 2. Studies suggested by project findings. In the course of collecting and analyzing study data, it is expected that topics requiring separate investigation will be developed.
- 3. Operational studies to test findings and conclusions. Both during the course of and following the study, changes might be tried out on an operating basis. Information can be made available to individuals and organizations concerned so that they may follow up as they wish. For example, if it should appear that the hypothesis that summer placement of medical students in state hospitals results in a greater movement of psychiatrists into state hospitals, cooperative ventures between medical schools and state hospitals can be arranged to further test out findings.

Budget:

Remainder of Calendar Year-1959

Consultants (per diem and travel), secretarial assistance, supplies. This includes 3 psychiatrists in addition to Dr. Blain, a sociologist, and a personnel administrator (all in California) as well as the existing Advisory Committee. This is cited as a conservative sum for the remainder of the calendar year

Continuation of studies of resi- dents and other pilot investigations in progress.

4,000

\$8,000

TOTAL \$ 12,000

#### SUMMARY

In summary, may I state that, with the help of a number of foundations which have contributed a total of approximately \$27,000, the first year has proved to be largely a matter of exploration rather than definition. A large number of interesting contacts with leading professional groups have been made. A tremendous amount of interest has been developed in the study. Many suggestions have come toward modifying it in one direction or another, perhaps most important has been the suggestion that since this is such an enormcusly important project, it must be done well or not done at all.

The activities of the consultants have been extremely helpful. It has been of particular interest to note that the highly successful National Manpower Council working with Dr. Ginzberg and his associates also came to the end of their first year remarking that, in spite of careful planning, the first year had turned out to be largely exploratory.

Of great interest was Dr. Ginzberg's remark that no definitive plan for approaching manpower studies had yet been devel-

oped.

The conclusion after 8 months of effort with a small staff is that the time is now come to enter into an intensive effort over a number of months, mainly to design a series of studies and operations which will, in time, enable progress to be made in this problem. Accordingly, a staff of competent technicians in research design, psychiatric and sociological personnel with clinical and teaching experience will work with the national consultants to produce such a program as may receive financial support over such a period of time as necessary for this important subject.

#### BIBLIOGRAPHY

1. Blain, D., and Robinson, R. L.: N. Y. State J. Med., 57: Jan. 15, 1956.
2. Albee, G. W.: Mental Health Manpower

Trends. New York: Basic Books, 1959.

3. Parker, Seymour: J. Med. Educ.: Oct. 1958.

# THE DEVELOPMENT OF AN EFFECTIVE STATISTICAL SYSTEM IN MENTAL ILLNESS <sup>1</sup>

#### ANITA K. BAHN 2

Mental illnesses constitute a public health problem of considerable magnitude, but data on the exact dimensions of the problem, the prevalence by time and place, and the relative risk of occurrence for various population groups, are greatly limited. Recently I had the opportunity to review the history of the national collection of mental illness statistics in this country. It is interesting to note the evolution of the public approach to this problem.

The 1880 census of the United States attempted to count "the number of mentally ill and defectives not only in institutions for their care, but also in jails, almshouses, other institutions and at home." By 1904, the census was limited to the "insane and feebleminded in institutions; those outside institutions were excluded on the grounds that their number could not be enumerated." Beginning with 1923, the Bureau of the Census, and later the Public Health Service, has conducted separate annual surveys of patients in mental institutions and in institutions for mental defectives and epileptics. As a postlude to the development of outpatient psychiatric clinics since the turn of the century, in 1954, a national reporting program on the outpatient psychiatric clinic population was initiated by the National Institute of Mental Health in cooperation with state mental health authorities.

Today, our long-range objective in the collection of statistics coincides with that original goal in 1880. There is recognition that a complete descriptive count of the mentally ill, whether or not seen in a psychiatric facility, is needed for epidemiological studies and for programming of mental health services. But today, we plan to achieve this goal in a more scientific and sophisticated way, using objective criteria and validated evidence of mental illness.

We are still far from such an accomplishment, which must be approached systematically through successive and progressively more difficult stages.

It is likely that Maryland will be one of the first states to take certain major strides towards this goal, and that it may serve as a model statistical laboratory for studies elsewhere. In an intensive methodological study this past year on the outpatient psychiatric clinic population in Maryland, with the assistance of the Johns Hopkins University School of Hygiene and Public Health, some of the problems of definitions and data collection in this field were resolved. Reports were obtained on every Maryland resident seen in an outpatient psychiatric clinic.

This is no small achievement, considering that some 60 clinics participated in this reporting system, submitting data on about 10,000 patients. This accomplishment reflects the fine cooperation of the personnel of the clinics and of the various program agencies for mental health: the State Health Department, the State Department of Mental Hygiene, the Baltimore City Health Department, the Veterans Administration, and the National Institute of Mental Health. As a result it is possible for the first time to compute rates of admission to and discharge from outpatient psychiatric clinics by demographic and diagnostic characteristics, to enumerate the number under clinic care at any specified time, to determine how much and what kinds of services outpatients receive, and the disposition made. These data will continue to be collected to provide information on changing patterns of services for the mentally ill. We are now preparing a comprehensive analysis of the data collected for the first year.

In addition to the reports on its own institutional population, the State Department of Mental Hygiene plans to obtain reports from the Veterans Administration psychiatric hospital, all private mental hospitals, and general hospitals which treat

<sup>&</sup>lt;sup>1</sup> Presented at the annual meeting of the Maryland Public Health Association, Easton, Md., Oct. 9, 1959.

<sup>&</sup>lt;sup>2</sup> Chief, Outpatient Studies Section, Biometrics Branch, National Institute of Mental Health, Bethesda 14, Md.

psychiatric patients who are Maryland residents.

These are the first stages in the collection of research information on the distribution of mental disorders in a state or community. What is the next step? Those who are familiar with services to the mentally ill will recognize that although data on outpatient and inpatient psychiatric services are essential for mental health program planning, there are limitations to the usefulness of separate statistics for each type of facility. Today, hospitalization or clinic visits may be only one of a long series of psychiatric experiences for an individual. A person may be referred to an outpatient psychiatric clinic for diagnosis, admitted to a hospital, discharged to outpatient followup care, perhaps readmitted to a hospital and so forth. Changes in treatment methods and hospital policies, and increases in the number and kind of psychiatric facilities open hospitals, day and night hospitals, half-way houses, psychiatric wards in general hospitals-have resulted in a more complex and fluid service pattern designed to meet more of the particular needs of the mentally ill.

What is the research implication of these. changes in mental health service programs? The rate of first admission to state mental hospitals is less and less useful as an index of the incidence of serious mental disorder. We can no longer look at only one psychiatric experience of an individual for meaningful study of the epidemiology of mental disorders or of the psychiatric care received. Without collation of information reported on the same individual by different facilities, it is not possible to answer the following kinds of questions: What is the unduplicated count of individuals by age. sex, color and diagnosis who are admitted to, discharged from or under the care of a psychiatric facility within the year? What number of individuals are admitted to a psychiatric facility for the first time this year? What is the relative risk of admission for each population group? What proportion of individuals diagnosed for the first time in a psychiatric clinic is subsequently admitted to a psychiatric hospital within X years after clinic discharge? Is the number and composition of the psychiatric population seen in psychiatric facilities fairly constant from year to year, or are there substantial increments and decrements each year? Are there any urban-rural differences in admission rates and subsequent psychiatric experience?

The next research step, therefore, logically is the development of a coordinated research file on the inpatient and outpatient psychiatric population. Prerequisite for such a file is reporting by all of the psychiatric facilities in an area on each admission and discharge, including reporting of the patient's name. The sole purpose of the file would be the effective utilization of the routine reports from psychiatric facilities, for epidemiologic and administrative research. Plans are underway for such coordinated reseach on all known psychiatric patients in the state. The following types of statistical studies are contemplated:

Incidence of diagnosed mental disorder by psychiatric classification, age, sex, color and urban or rural residence, based on number of individuals who are first reported under pare of a psychiatric facility during a year.

Diagnosed prevalence based on unduplicated counts of patients under care of a psychiatric facility as of a given date or during some defined interval of time.

Longitudinal or followup statistical studies of diagnosed cases, based on routine reports received from psychiatric facilities. This will include, for example, study of changes in diagnosis and psychiatric care for individuals who come into the psychiatric population at different ages, probability of readmission to a psychiatric facility within a specified period after discharge, etc. Thus we may begin to obtain more definitive data on the natural history of the various types of mental illness.

Estimates of the psychiatrically ill population known but not under care during the year, based upon various assumptions with regard to duration and activity of the illness, sample studies of records of the social service exchange, etc.

Special research such as genetic studies and studies of the relation between reported psychiatric illness and suicide and police cases.

These statistics will be available not only on a statewide basis but also by county so that health officers can know the magnitude and characteristics of diagnosed mental illness in their locality.

#### DISCUSSION

Research of this type and scope, although applied to other chronic illnesses such as cancer and tuberculosis, has never been undertaken before for mental illness, either in this country or elsewhere on a statewide basis although it is being attempted in a number of communities. Reporting procedures, survival rates and other aspects differ in this health field. Methods for the maintenance of the files and for the analysis of the data, therefore have to be developed.

Since practically all of the basic information needed for such a project is now or will soon be reported on a current basis, there is no question that the efficient use of these data as outlined is the next step in systematic research on community aspects of the care and treatment of the mentally ill. It is a challenging experiment and is possible only through the continued cooperation of the clinic personnel and agencies in this field.

Now let us look, however, still further ahead to other progressively more difficult research. The individuals who go to psychiatric facilities may represent a highly selected sample of those mentally ill. We know that there are long waiting lists for admission to some clinics, that not all those referred to a psychiatric facility go there, that psychiatric illness may be undetected. The availability of psychiatric and other community facilities, number of hospital beds, and admission policies are selective factors affecting the number and kinds of patients seen.

Therefore, a still more advanced stage of research on the distribution of mental disorders is to broaden the base of our data in at least some communities. This means reports from private psychiatrists, general practitioners, social agencies, courts, schools, marriage counselors. Sample household interviews represent a still finer screening device for case finding of mental disorders in a total community study.

Some very difficult methodological problems are inherent in such studies: the definition of mental illness, case finding methods, the determination of the approximate date of onset of the disorder and its duration and presence or absence at any time. Despite difficulties, these problems must be solved in order to answer a basic question: What is the relationship between data on the mentally ill seen in psychiatric facilities and mental illness in the general population?

Several one-time community studies have already been carried out or are underway—studies in Yorkville, New York and in a county in Canada are recent examples. There have also been two well known surveys in Baltimore: the study in 1936 of mental illness in the Eastern Health District by Lemkau, Tietze and Cooper based on medical and social agency records, and a study in 1952 of mental illness and other chronic disability by the Commission on Chronic Illness, based on household survey and clinic examination of a population sample.

I hope that within several years, a start can be made on a continuing study of psychiatric illness in some Maryland community or communities based on case finding methods applied to the general population. Such a study could provide more complete epidemiologic information than studies based on the psychiatric patient population alone. In addition, if continued for a number of years, such a study could provide for the first time prospectively collected data on the natural history of mental disorders.

## FURTHER DEVELOPMENTS IN THE DAY HOSPITAL 1

T. J. BOAG, M.B., CH.B.2

The Day Hospital at the Allan Memorial Institute was the first in the field. After 12 years of operation it exhibited difficulties which required an extensive reorganization. In the course of this we examined the basic premises on which it operated, and took advantage of an excellent opportunity to review the history of the day hospital as an institution, and the place it occupies in the field of psychiatric practice.

#### HISTORY

The many arguments which have been advanced to support the notion of the day hospital fall under 3 main headings, namely, economy, preservation of the family group and community contacts, and minimizing the ill effects of hospitalization—principally over-dependency.

If one looks at how day hospitals actually came to be set up they have developed in 3 different situations.

- 1. As a new part of an existing hospital, where something less than full inpatient admission is desired. This approach is mainly identified with Cameron(1).
- 2. As a development from social clubs and similar organizations when it is found desirable to provide more treatment facilities. This is seen in its clearest form in Great Britain and is identified with Bierer (2), who apparently adopted the name day hospital from Cameron.
- 3. As a manifestation in the terminal phases of hospital treatment of inpatients, as described, for example, by Gilmore(3) and by Barnard et al.(4). Developments of this type have tended to remain informal and have not stimulated interest and growth to the same extent as the first two.

The first psychiatric day hospital as such, was opened by Cameron(1) in 1946. There had been informal forerunners of this experiment, for instance in 1935, Woodall(5) treated neurotic patients at Adams House

on a day basis. According to Aron and Smith(6), Dr. Helen Boyle admitted day patients to the Chichester Hospital in Hove as far back as 1938, but no other report of this can be found. There is also a report of a social club for old people, set up in New York in 1943, which grew into a larger centre(7). During this period, in England, Bierer(2) was approaching the same goal by a different route. From 1944 on, he began to think of his therapeutic social clubs as leading to something like the day hospital and opened his day hospital in 1948 as a separate institution unattached to any parent hospital. Other developments in Great Britain have been modeled on Bierer's plan(6), or have followed a similar development(8). Others have been modeled on Cameron's earlier description, e.g. those at the Maudsley and Bethlem Hospitals described by Harris (9). In North America after a slow start, there has been steady spread. A day and night centre was set up in the Yale Psychiatric Clinic in 1948-49(3). Moll(10, 11) at the Montreal General Hospital first developed a day hospital modeled on Cameron's description but adapted to a smaller setting, and later expanded it in the form of a night centre, so that the same space is utilized throughout the 24 hours. In 1958 the Day Hospital Conference organized by the American Psychiatric Association (12) underlined the rapid development, and the multiple applications of this concept, in many areas of psychiatric endeavor. To complete this brief historical sketch one should note that this new therapeutic setting is being adopted by other branches of medicine. Cosin(13) set up a Geriatric Day Hospital in Oxford in 1955 and in the Royal Victoria Hospital a 20-place day hospital for patients in the Department of Internal Medicine is a part of the current building pro-

# THE DAY HOSPITAL AT THE ALLAN MEMORIAL INSTITUTE

The day hospital at the Allan Memorial Institute had remained relatively un-

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Assistant to the Director, Allan Memorial Inst. of Psychiatry, Montreal, Quebec.

changed in its structure and functioning, other than an increase in patient load and some improvement of quarters, until 1958 when it was extensively re-organized, as I shall describe. Some aspects of these changes have already been reported elsewhere (14, 15). From the start in 1946, the day hospital was set up as a consciously planned experiment in the provision of a new treatment setting. It was an integral part of the Institute and accounted for a sizeable proportion of the patient load. At the start, with 20 places, it carried one third of our hospitalized patients. In 1954, when the Institute expanded, the day hospital grew to 40 places maintaining the same ratio.

To convey a clear picture it is necessary to outline the overall setting. The Allan Memorial Institute is, itself, part of a general hospital. The Institute is entirely open. At the most, about one-quarter of our day hospital patients have been transferred from the inpatient side. The day hospital does not operate only as a half-way house on the way to discharge but as one established resource in the hospital with its own sphere of usefulness. Patients are transferred actively in and out of it according to their current requirements. All forms of physical treatment are available on the day hospital except deep insulin coma. Patients are not selected in terms of diagnostic category. The principal criteria are their ability to travel, and the feasibility of their continuing to live at home during treatment. At times when there is a large waiting-list for inpatient beds, it is necessary to treat seriously disturbed patients who would normally be admitted day and night. As well as drawing on the general services of the Institute, clinical responsibility for patients is divided among 4 public ward services, each of which has patients on all wards, including the day hospital. This division of medical responsibility for the group as a whole, means that the nurses on the day hospital occupy a central position in its social structure(14).

# REORGANIZATION

The reorganization in January 1958 was brought about by difficulties of which we

had become increasingly aware during the previous two years. In spite of the demonstrable usefulness of the day hospital over the years and the devising of techniques to manage a wider range of patients, we had begun to experience growing difficulty in maintaining an adequate level of occupancy. We were well aware of a number of contributing factors which were beyond our control. There had been a steady growth of other psychiatric facilities in the city. The major hospital insurance schemes refused to recognize the day hospital for insurance payments so that treatment there cost an insured patient more out of pocket than if he was admitted. We had developed a range of ambulant treatment facilities in the Institute and these were to some extent competing with the day hospital. A further reason, of which we were not aware when the reorganization started, but which became obvious as it proceeded, was the need to formulate a program on the day hospital which was specific to it, and therefore, capable of attracting its own category of patients. With some slackening of the pressure for admission due to the first 3 causes, this last became decisive.

The reorganization primarily took the form of integrating within the day hospital the other ambulant treatment facilities which had developed separately. We had developed a program of outpatient followup psychotherapy to deal with problems that had been investigated, defined and initially worked on during the patient's brief stay in hospital. The new organization enabled us to co-ordinate this therapy with other elements of a more extensive therapeutic program. We had, many years before, established a therapy unit, which provided physical treatments for outpatients. We had found it useful in the therapy unit to institute an evening clinic where these patients could come after work, usually for ECT or somnolent insulin, thus avoiding time off work. The special schizophrenic follow-up program aimed at maintaining therapeutic contact with our schizophrenic patients throughout a long period of rehabilitation-a minimum of 2 years and much longer in some cases. Another special group of patients chosen for long-

term contact were those who had experienced recurrent depressions, usually of the manic-depressive group with repeated admissions and disruptions of family life and work. These patients are carried on prophylactic ECT as originally described by Stevenson and Geoghegan (16). We eventually extended this to recurrent and relapsing depressions in the involutional period. More recently we have set up a similar group of geriatric patients who are followed over a prolonged period. Another activity which was integrated was the use of the occupational therapy department. This had become increasingly used for patients to follow up a new interest developed in hospital, on a part-time basis following discharge from the phase of intensive inpatient treatment. Here an increasing number of old people attended regularly as groups. In addition to normal case work, there had developed within the social service department a special volunteer program which provided well-motivated and suitable volunteers who extended the help of a friendly relationship to patients who specifically needed this during the post-hospital phase of resettle-

Other activities within the hospital, while not actively integrated in the program, were closely coordinated with it when required. These included referral to small, closed, long-term psychotherapeutic groups in the extension department and membership in our ex-patients' social club. Co-operative ventures with various outside agencies provided us with help, e.g. the rehabilitation centre for vocational problems, and a program established with the help of the Victorian Order of Nurses to provide a home visiting service for patients on ambulant treatment.

These activities had grown to the point where they needed space and staff which simply were not available. An initial advantage of integration was the creation of a larger unit within which space and staff could be used more flexibly and efficiently. An ultimately more important advantage was making these services readily available in combination with one another or with some part of the full-time day hospital program. We aimed at providing services

on a continuum from full-time day hospital care (9 a.m. to 5 p.m. 6 days weekly) to occasional widely-spaced visits. A suitable grouping of treatment could be prescribed to fit the needs of each patient. In formulating the range of services it was necessary to define the limits of the continuum. At one end it faded off into complete loss of contact with the hospital, but at the other we had to make some statement as to the services that should be provided for fulltime day hospital care. In doing this we were led to a reformulation of the basic premises underlying management of the full-time day hospital setting and, subsequently, to radical changes in the setting. These changes set up new sequences of change which had not been predicted at the start.

At the time, our preciction was that it might shrink still further or might even cease to exist, being replaced by more and more part-time treatment. However we had to consider what the characteristics of such a full-time setting should be and whether it was possible to devise a program that would be specific to it, and different from an outpatient clinic, on the one hand, and full-time inpatient treatment, on the other hand. It was clear that we must provide for orthodox "medical" treatment, including physical treatments, sedation, adequate physical examination and investigation, care of confused patients, etc. These were necessary parts of a comprehensive treatment program, and, in addition, we had to care for a certain number of disturbed and confused patients awaiting inpatient beds. However, in these traditional activities there lay the risk of provoking excessive dependency needs. The absence of a bed disrupted the traditional roles of the hospital patient and of the nursing staff. Activities oriented around bedside nursing were not appropriate to the situation of a patient on the day hospital, and it was necessary to put something in their place if healthy interactions were to be possible. We started with the working assumption that for the majority of patients referred to the day kospital the development of multiple relationships within a group was not only possible, but was also therapeutically desirable. It was therefore

necessary to foster development of a strong democratic group structure on the ward, the activities of which led away from dependence on the hospital, and towards establishment of progressive defences, and independent and responsible functioning. Such development was conceptualized as occurring in 4 steps.

- **!** Undertaking activities together so that a structured group with strong relationships between its members could, in fact, develop.
- 2. Discussion of these activities and verbalization of the emerging interactions.
- 3. Interventions by the staff lending support and prestige to the idea of progression towards independence and encouraging a "psychological" attitude, *i.e.* perception of daily events and interactions on the day hospital as an acting out of the patients' internalized conflicts.
- 4. Working toward reality solutions, in the spheres of work, family life, development of new sublimations, etc.

In practice, these changes were implemented by the introduction of a program of group activities which later developed and changed as the day hospital developed a social structure of its own and methods of expressing demands and formulating new institutions to satisfy them.

First, and most important of these activities was the discussion hour. This took place daily from 1 p.m. to 2 p.m. and was attended by all patients who could be persuaded to come and all nursing staff who were free. It was conducted by the head nurse, the central figure in the social system of the day hospital. In so far as the discussion hour served as the principal arena within which the issues of life on the ward could be thrashed out it was important that her role within the group conform to the reality of her day-by-day position in the day hospital. We did not expect the nurses to offer deep interpretations of unconscious behaviour. Their general aim was to orient patients towards understanding, towards rehabilitation and independence, and to the use of other sources of help available in the hospital.

Other groups met less frequently, usually weekly, and by and large served the purposes of Step 4, i.e. working towards real-

ity solutions. A socio-drama session was devoted to acting out current situations on the day hospital or from life outside. For patients who were not ready to deal with current reality situations, the showing of psychiatric movies offered more neutral visual stimuli and opportunities for identification. On the basis of individual needs patients were referred to a number of special groups under the leadership of social workers, each dealing with a particular problem area. For example, the "work group" dealt with problems of employment, not only realistic difficulties in obtaining work and the offering of direct help and guidance in this, but, also, such questions as the meaning of work in our society, and the specific blocks and difficulties of individual patients. Another such group dealt with family problems and another with problems of social isolation.

Other activities were started with the help of the occupational therapy department and volunteers utilizing social and diversional content to structure the group and its daily routine.

These examples must suffice to give some idea of the content of the program.

#### RESULTS

During the early stages, we were concerned about the effect on the group structure of the day hospital of dilution with large numbers of part-time patients and the disruption of activities by the increase in traffic. We feared that the group might disintegrate under these conditions so that we would be left with a heterogeneous collection of patients, meeting one another irregularly, and developing only tenuous relationships. However, there were also signs that the group, faced with this threat to its existence, began to tighten its boundaries, became more exclusive, and emphasized the differences between fulltime day hospital patients and part-time patients. Before the precarious balance between these two effects was resolved it ceased to be a relevant issue, as a new and unexpected phenomenon appeared. The initiation of the activity program among the full-time patients produced a remarkable revitalisation of this group, and a period of rapid growth commenced. The new activities served as a framework within which spontaneous developments occurred and these were accompanied by a rise in occupancy and an upsurge of new referrals. Within 3 months, we had, for the first time in vears, a waiting list for full-time admission. The improvement in morale showed itself, not only in patients, but also in the staff. Staff members who had initially been skeptical and resistant were won over and became active participants. Its relevance to the needs of patients was attested not only by the more numerous referrals but also in the increased readiness of patients to accept treatment on the day hospital and to maintain their attendance.

These changes, of course, had their impact on other parts of the hospital. The day hospital acquired a new prestige and patients were increasingly willing to be transferred to it. Patients on other wards pressed to join in activities set up on the day hospital and to adopt them on their own wards. The program stimulated interest among nursing staff in the possibilities of milieu therapy on other wards.

These rather dramatic developments have overshadowed to some extent the other changes and the consolidation of a smooth and more flexible integration. Other unpredicted factors which have influenced the situation are the use of tranquilizers and the recent introduction of safe and effective anti-depressant drugs which have diminished the number of physical treatments given. These developments have served to emphasize the need to maintain flexibility and an open mind to new developments. They emphasize the importance of setting up new services in such a way that they are not rigidly tailored to the apparent needs of the moment, but can grow and respond to the changing patterns of therapeutic needs and techniques. The day hospital now offers us the possibility of combining a wide range of different types of treatment into complex patterns which are tailored to the needs of the individual patients and can be readily varied as these needs change. With this resource we can treat many patients who otherwise could not be carried in a short stay hospital.

#### DISCUSSION

Such changes as I have described must be seen against a wider canvas. Historical developments led to the growth of the large state hospitals in North America which deal with the largest group of psychiatric patients. More recently, another kind of psychiatry grew up, to some extent practiced in clinics, but largely associated with private practice. In a recent paper MacIver and Redlich(17) pointed up the lack of contact between these two areas of practice to the point where we have a different kind of psychiatrist inhabiting each camp. The existence of these widely separated concentrations makes it all the more important to explore the hinterland between them. The day hospital should be seen as one of the attempts to formulate treatment settings which offer more control and protection than office rsychotherapy without going to the other extreme of deprivation of civil rights and commitment to a closed hospital. Although others had used such part-time treatment informally earlier, Cameron's setting up of the day hospital in 1946 initiated a new series of developments because it set up an empirically defined unit on a regular and continuing basis, because an attempt was made to delineate for it a particular area of usefulness, because it represented a practicable and selfsupporting service which satisfied a community need, and because he devised an elegant and evocative title for it. The considerations adduced emphasize the importance of defining the characteristics of such experimental settings as clearly as possible so that their performance may be evaluated, of formulating a rationale for their mode of functioning, and of setting them up from the beginning so as to encourage the emergence of new permutations and combinations in response to changing needs from within or without.

#### SUMMARY

The day hospital is one of a series of experiments in devising new psychiatric treatment settings. It has been a useful and productive development. The models created in different centres differ widely in their general applicability, their clinical usefulness, and their theoretical interest.

The first day hospital was set up at the Allan Memcrial Institute in 1946, and in 1958 was reorganized to provide services in combinations matched to the individual patients and readily varied as necessary. Coincidentally a re-examination of its social structure led to an activity program which produced marked changes. These changes not only remedied current difficulties operating the day hospital but also greatly extended its range of usefulness.

## **BIBLIOGRAPHY**

1. Cameron, D. E.: Modern Hospital, **69**: 60. Sept. 1947.

2. Bierer, J.: The Day Hospital, an Experiment in Social Psychiatry and Synthoanalytic Psychotherapy. H. K. Lewis & Co., Ltd., W 6 p. 3, v 5905, 1951.

3. Gilmore, H.: Am. J. Psychiat., 108: April 1952.

4. Barnard, R. I., Robbins, L. L., Tetzlaff, F. M.: Bull. Menninger Clinic, 16: 50, March 1952.

5. Woodall, J. M.: Report of the Medical Unit of Adams House 1941.

6. Aron, K. W., Smith, S.: J. Ment. Sci., London, 99: 564, July 1953.

7. Cameron, D. E.: In Proceedings of 1958 Day Hospital Conf., American Psychiatric Assoc., 1958.

8. Morgan, G. D., Tylden, E.: Lancet, 1: 877, April 27, 1957.

9. Harris, A.: Lancet, 1: 729, April. 6, 1957.

 Moll, A. E.: Am. J. Psychiat., 109: 774, April 1953.

11. Moll, A. E.: Am. J. Psychiat., 113: 722, Feb. 1957.

12. Proceedings of 1958 Day Hospital Conference, American Psychiatric Association, 1958.

13. Cosin, L. Z.: Proc. Royal Society of Med. (London), 49: 237, May 1956.

14. Boag, T. J.: The Role of the Psychiatric Nurse Working on the Day Hospital. Proceedings of First Canadian Conf. on Nursing in Psychiatric Divisions of General Hospitals, 1959.

15. Boag, T. J.: The Day Hospital as a Therapeutic Community. Presented at Conference on Therapeutic Community, 1959. In press.

16. Stevenson, G. H., Geoghegan, J. J.: Am. J. Psychiat., 107: 743, April 1951.

17. MacIver, J., Redlich, F C.: Am. J. Psychiat., 115: 8, Feb. 1959.

# HOME TREATMENT OF PSYCHIATRIC PATIENTS 1

#### T. T. FRIEDMAN, M.D., PHYLLIS ROLFE, M.S.S., AND STEWART E. PERRY, A.B.<sup>2</sup>

The mental hospital is no longer thought of as the center of treatment where people can be "factory rebuilt." More and more attention is being given to before-care and after-care management of mental illness. Taking account of the therapeutic value of social factors we can speak of "social treatment." The wider implications of such management, together with the work on the cultural and family aspects of mental illness, have helped develop the practice of social psychiatry. In social psychiatry there is an attempt to integrate the process of case finding, referral, diagnosis, treatment and after-care, whether in the clinic, the hospital, the home or the community. Notable examples of programs aiming in this direction exist in Amsterdam, Holland (1), and also Worthing, England(2). In both these instances the cornerstone of the system has been a home visiting service wherein psychiatrists and social workers go directly to the home of patients for emergency care or they may return regularly for treatment and supervision, where indicated.

In September of 1957 a Psychiatric Home Treatment Service, a pilot project, sponsored by the NIMH under the initiation of Dr. Walter E. Barton and Dr. James Mann, was established at Boston State Hospital for that section of the City adjacent to the hospital. This area consists of a lower middle-class residential section, containing 80,000 people. Potential case-finding agents in the area, such as family doctors, social agencies and clergymen, were notified that a psychiatrist and social worker would make home visits to families that had a member with serious mental illness where hospitalization was being considered.

The 3 criteria for acceptance of a case were: residence in the designated area; age 16 to 60; and serious mental illness. The aim of the Service was to provide better management of mental illness at a time of stress and to see if appropriate alter-

natives to hospitalization might be possible.

Clinical personnel originally consisted of a psychiatrist and social worker, but there have since been added another social worker and two psychiatric nurses.

Sixty cases were accepted during the first 15 months of operation. In each instance, the doctor and social worker went to the home of the patient. In the first part of the visit they conducted a family interview with everyone present. Then the social worker went into another room with the rest of the family while the psychiatrist interviewed the patient by himself. Following this, the doctor, social worker, and the whole family again got together to discuss what should be done immediately. The most common decision was that several more diagnostic interviews would be conducted before a disposition was recommended. An effort was made to encourage the patient or family to make use of any agency that had been therapeutic for them. in the past. Attention was also given to the social pressures such as financial instability, legal problems, and alcoholism that complicated the management of the mental illness. Both the doctor and the social worker have an opportunity to see the patient in his everyday environment with the people most important to him, and can jointly have a better grasp of the whole problem.

Of the 60 patients referred, 22 came from community agencies and clinics, 19 from family doctors, 12 from the family, 5 from the clergy, one was self-referred, and one from a housing project manager. Of this group, 40% were hospitalized and 60% were able to remain in the community. The majority of those hospital zed were persons with acute schizophrenic reactions, mostly of the paranoid type. Most of the others were psychotic depressives. In one half the hospitalized cases alternatives to hospitalization were vigorously pursued with the use of drugs, frequent home visits, and attempts at outpatient care. When definitive care was not possible at home, the task for the team was to smooth the way to the.

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Boston State Hospital, Boston, Mass.

hospital, overcome the patient's and family's resistance to such a plan, arrange for transportation, and sustain the family and patient if hospitalization had to be delayed. Much confusion and stress can be generated around hospitalization. For example, family doctors report that this is a difficult problem and appreciate a psychiatric consultant who comes to the home much as they would appreciate having a surgeon come down for a question of an acute abdomen. The social worker is also on the home scene to help deal with the family's anxieties and other serious social consequences of the mental illness, as well as the financial problems, the question of child placement and homemaker services.

Sixty percent of the cases referred were able to remain at home. In about half this number, the psychiatrist judged in retrospect that hospitalization was imminent; in fact most of them had been in the hospital in the past. In some instances the family had called the hospital to request admission, and in one case the patient had appeared in the Admitting Room of the hospital. When patients had been hospitalized before, the family and their doctor often think of rehospitalization as the quickest solution to a new crisis. These individuals could be loosely designated as borderline in reference to the severity of their illness and efforts had to be directed to preserving their defenses and sense of reality. In some instances there was the opportunity to deal with those aspects of the family relationship which were aggravating the illness. If psychotherapy was indicated it was necessary to find the clinic or therapist that was available, to convince the patient and the family of the necessity for psychotherapy, and then to keep the patient and the family on an even keel, sometimes for many weeks, until therapy could begin. In other instances the Home Service itself could provide psychotherapy at home to at least restore equilibrium. A great deal of time was spent on the telephone to coordinate the activities of the many agencies needed to solve the complex problems faced by the family and the patient.

About half the people who remained outside of the hospital were judged by the

psychiatrist in retrospect not to have been imminently hospitalizable. The presenting problems included alcoholism, exacerbations of chronic family conflicts, and the appearance of increased symptoms in those with long-standing emotional problems. Several children in these families were found to be very disturbed. Obtaining treatment for them had been rendered quite difficult in the past by the parents' inability to cooperate in such treatment. In these families the availability of a Home Service is important because of episodic crises and the need to prevent hospitalization which, in the long run, would not alter the basic social pathology. Such people have to be sustained from time to time with visits by the doctor, the nurse, or the social worker.

Case: A 19-year-old college girl refused to leave her home for several months because of severe anxiety, somatic delusions, and fear of losing control of her impulses. She had been in outpatient psychiatric treatment for 5 months but had broken off treatment and was unable to return. Her family doctor tried drugs, without success, and was considering hospitalization when he referred the family to the Home Treatment Service. Joint and separate interviews at home revealed the parents' fear that psychiatric interviews had been making the patient worse. It was decided to remotivate the girl for outpatient therapy and to involve the parents in such a treatment plan. Home Treatment visits were made once a week for 3 months, with the psychiatrist seeing the girl, and the social worker seeing the parents, with frequent family conferences. The girl's symptoms improved and she was able to return to the outpatient clinic which had been kept informed of her progress. The mother was convinced of the need to see a social worker and to participate in the treat-

Some of the differences between seeing people at home and seeing people at a clinic are worth noting. For example, a patient's initial resistance and motivation to participate in outpatient therapy, necessarily of great importance in the clinic setting, is not a crucial issue for a Home Service. Therefore, persons who are inaccessible to outpatient therapy, or who have broken off treatment and are becoming more ill, can be seen by a Home Service.

Environmental and social manipulations are often hit-and-miss procedures in an outpatient setting; however, in the home, where everyone concerned can be consulted and a personal relationship made to the family, such manipulations are on surer ground and perhaps deserve the name of social prescriptions.

## SUMMARY

The present report refers to 60 cases seen in the first 15 months of a small Home Treatment Service. The doctor, accompanied by a social worker, functions as a general practitioner-psychiatrist, working primarily in the home and collaborating directly with community agencies. Inacces-

sible patients can be reached at home for either brief or long-term therapy, and families may be directly included in the treatment process. Appropriate alternatives to hospitalization can be worked cut and numerous agencies helped to coordinate their function in helping a family. A Home Treatment Service also provides an opportunity for mental health education to families, doctors and social agencies around concrete situations and on a personal basis.

#### **BIBLIOGRAPHY**

1. Millar, W. M., and Henderson, J. G.: Int. J. of Soc. Psychiat., 2: 2, 1956.

2. Carse, J., Panton, E., Watt, A.: Lancet, 1: Jan. 1958.

# THE MENTAL HOSPITAL: CORNERSTONE FOR COMMUNITY PSYCHIATIC SERVICES 1

FRANCIS J. O'NEILL, M.D.2

At the last annual meeting of the American Psychiatric Association held in San Francisco, the presidential address contained statements and allegations which have produced tremendous reaction from the members of this organization associated with mental hospitals. Before discussing these statements and their effect upon the care of the mentally ill, I should like to go on record along with most of my colleagues in the mental hospitals as being heartily in favor of the development of diagnostic and treatment facilities at the community level. If one examines the record he will find that the public mental hospitals in the past have been almost the only agencies providing psychiatric services to local communities. Although not required by law, most of our public mental hospitals have in the past recognized the great need for community level facilities and have attempted in spite of meager staffs and other handicaps to provide some form of mental health clinic for the communities served. Few of us will claim that these services have been adequate. However, until quite recently they were almost the only public facilities available for early diagnosis or treatment in the community. We well recognize that early diagnosis and treatment of mental illness at the community level is the great need in psychiatry today.

Our mental hospitals were originally founded with the belief that they could provide short term definitive treatment for mental illnesses. The annual reports of early mental hospitals, reveal this hope expressed as a reality. Mental hospitals vied with each other in publishing high rates of recovery from mental disease. It soon became evident that these recovery rates were not real but rather the result of releasing unrecovered patients who often were readmitted within a few days of discharge. It required almost a hundred years of largely

custodial care before a genuine improvement in the release rates of our mental hospitals occurred. Those of us who are in close touch with developments in the public mental hospital are enthusiastic about the profound changes that are now taking place—changes which I personally believe indicate that the mental hospital will continue to play the dominant role in providing care and treatment for the mentally ill of America in the future. As a result of what is developing in our hospitals, I believe that a general change from custody responsibility to an active treatment program is in the offing.

In this country it has been the philosophy that mentally ill persons who fail to adjust in the community should be cared for in mental hospitals until such time as their symptoms would permit readjustment in the community. The public has not been tolerant of the disturbed mentally ill person in the community. Huge sums of money have been spent for institutional care. But in many instances the amount provided has not been sufficient to permit the public mental hospital to provide more than a token of custodial care.

The lack of definitive treatment facilities within the framework of our mental hospital systems is a result of the backward position of psychiatry in the field of therapy. While other branches of medicine have made tremendous strides in developing therapeutic tools, we in psychiatry have been largely preoccupied with providing custodial care for huge numbers of mentally ill persons. Within the past 10 years, however, there has been a stimulating change. New therapeutic tools are being developed which make it possible to treat fairly adequately substantial numbers of patients who formerly were untreatable.

The slow progress in developing therapeutic tools has been due to the paucity of research facilities. In this area psychiatry is far behind other branches of medicine. Other medical problems have been solved as a result of intensive research. The same

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Central Islip State Hospital, Central Islip, N. Y.

will be true in psychiatry. It is significant that we are now beginning to see the development of research units in the mental hospitals in this country. In the past few years, many such units have been established and the benefits from their activity are already being realized. Mental hospital research has been a vital factor in the recent advances achieved in psychiatry. The use of the public mental hospital as a research center is a logical step and should have been developed a long time ago. These institutions carry the load of care of the mentally ill of America. Their resources in research material cannot be matched in any other setting. If effective treatment methods are to be developed they must be developed within the mental hospital.

With the introduction of the concept of liberalization in mental hospital care during the past few years there has been a decided change in the hospital atmosphere. Time does not permit me to go into details concerning the progress that has been made as a result of the concept of the open hospital alone. The enthusiasm with which this progressive step has been accepted by psychiatry and other disciplines is most assuring. However, liberalization of care with its attendant benefits is not something which is accomplished in a vacuum. Its success depends upon the hospital's relations with the community and the integration of hospital and community is an essential element in this new philosophy. As a natural outgrowth of such integration the mental hospital must assume a responsible role in providing community level psychiatric care. Some of our psychiatric philosophers may feel that our mental hospitals are not equipped to play this role. If they are thinking of the hospital of 10 years ago they are probably correct. The newer concept of the hospital's responsibility to the community is, I believe, well-illustrated by what has been going on in many areas in Great Britain and to a lesser extent in the United States in the past 10 years.

British psychiatry 10 years ago was faced with the same problems as psychiatry in America. Their institutions were largely custodial and isolated from the community served. As a result of social changes and under the leadership of some inspired psy-

chiatrists many of the British public mental hospitals have developed community mental health services which provide a total mental health program with the mental hospital as a center. Those of us who have been fortunate enough to see these British programs first hand are assured that the public mental hospital has an important role to play in community psychiatry.

Critics may point out that there is a difference between the mental hospital system of Britain and that of the United States. In general our hospitals are larger and to some extent more isolated from their catchment areas. This is a distinct disadvantage but not an insurmountable one. Communication and transportation are changing so rapidly that distance is not the formidable barrier of the past. If one examines the location of our public mental hospitals it is found that many of them are in heavily populated areas and well-situated to deal directly with their local communities. The greatest difficulty is that confronting the large metropolitan hospitals, which are frequently located some distance from the areas served. Integration of these hospitals into a community program requires extensive planning and perhaps reorganization. This same problem confronted British psychiatrists in London. They have found a partial solution in the development of extensions of the mental hospitals in the heavily populated metropolitan districts. Perhaps we will be able to follow their example although admittedly this is not an easy problem to solve.

In general, community mental health services in Great Britain have been developing around their public mental hospitals. The staff of the mental hospital services the community clinics, day-care center and welfare homes and provides psychiatric consultation to the psychiatric divisions of the general hospitals. The fact that medicine is socialized in Britain has undoubtedly facilitated the development of this well-integrated total community psychiatric service.

There are several cutstanding examples of total community mental health services centered around mental hospitals in Great Britain. Most of them have many elements in common but all of them have the ob-

jectives of providing easy access to psychiatric care. These programs tend to encourage a continuity in patient care whether it is rendered in the home, in a community facility or in the mental hospital. The development of these hospital centered community programs has profoundly changed the structure of the hospitals associated with them. Admission rates to hospitals have greatly increased, duration of hospital residence has been shortened and early diagnosis and treatment appears to be a reality.

As an example of what has happened to a mental hospital with a good community program, may I take the liberty of pointing to one British institution, Mapperley Hospital in Nottingham. The community program associated with this hospital has been built up during the past 10 years. Mapperley is a relatively large hospital for Britain, having about 1,100 beds. It is completely open with almost 100% voluntary patients. The average stay of a newly admitted patient is about 4 weeks. The members of the staff of the mental hospitals carry responsibility for a community program including a variety of clinics, domiciliary consultations and psychiatric services in the general hospital. Prior to the institution of the community program, Mapperley admitted less than 300 patients a year, during 1956 the admission rates had increased to over 1,500 patients a year. In spite of this, the actual number of patients in the hospital had decreased from 1,100 in 1945 to 1,050 in 1956. From this it can be seen that where the mental hospital is a center for community psychiatry there may actually be a decrease in the population of the hospital in spite of a tremendous increase in yearly admission rates.

In the United States several of the states have begun to develop community mental health services. For the most part, however, the existing mental hospitals are not part of this new development. To me this is an unfortunate trend. If we are to provide community psychiatric services geared to future development of treatment methods, there should be a close integration of all public health services. Our established mental hospitals with their professional staffs, training facilities and diagnostic

equipment should be a logical center for these new services and would undoubtedly be able to bridge some of the serious gaps which now impede their development. Such an arrangement would not necessarily interfere with the private practice of psychiatry which is developing so rapidly in this country. Safeguards should be built into these programs so that those who are able to pay for private psychiatric care would not be diverted from private facilities.

The present trend toward development of community level psychiatric care is an encouraging one. Any attempt to separate such programs from existing mental hospital programs would set up artificial barriers between the community and the hospital, nullifying many of the hard-won achievements of recent years in hospital-community relations. Public education is making acceptance of psychiatric treatment a reality. It would certainly be a step backward to undermine this growing public confidence through the establishment of a confusing and completely illogical dichotomy in psychiatric services.

In the light of our present knowledge, we must recognize that there are a substantial number of mentally ill persons who develop chronic diseases even when early diagnosis and treatment is available. Dr. Solomon in his address indicated that he was of the opinion that new facilities should be established devoted to care and custody of the chronic psychiatric patient, largely divorced from psychiatric care and supervision. This suggestion is probably the most difficult for the mental hospital psychiatrist to accept. We have been dealing with the chronic patient for a long time. Those of us who have been in institutional psychiatry since before World War II recognize that there is now a distinct change in prognosis of the chronic patient. Cases formerly considered hopeless are now being successfully treated, although not totally recovered, as a result of one or another of the treatments, available. Many patients with prolonged hospital residences are being returned to the community in an improved condition. The • tranquilizing drugs are playing an important role in this development. Mental disease in general has a tendency toward chronicity. If we are to follow Dr. Solomon's suggestion

and abandon the chronic patient to some other discipline we would be false to our medical responsibilities. This is not dissimiliar from the suggestion that cancer is incurable. Our hope for successful treatment of mental illness lies as much in the development of effective treatment for the chronic patient as the development of community facilities for early diagnosis and treatment. The chronic mental patient is a medical responsibility and I am sure that American psychiatry will not abandon him to the care of educators, public health persons, sociologists or city planners as recommended by Dr. Solomon. I hope that we have passed the stage of therapeutic nihilism in psychiatry. To give up our responsibility for any segment of the mentally ill population would be to return to the dark

Admittedly our mental hospitals are suffering from the lack of professional personnel at all levels. This I do not believe is the fault of the hospitals but rather an indication of economic circumstances and perhaps a changing attitude on the part of physicians in general. I do not want to be put in the position of criticizing my own profession but there are indications that physicians in general are becoming more interested in the economic return in practice than they were a few generations ago. Local communities are having to establish emergency medical services because physicians do not appear to be assuming their full responsibility for answering the call of the sick person regardless of economic circumstances. Public opinion polls indicate that the economic interests of the physician have materially lowered his status in the eyes of the public. In general, medicine is no longer looked upon as a calling of service but one of economic security, and service in the public mental hospital is not economically attractive to the graduates of American medical schools. Perhaps this is the fault of our governing bodies. I have personally felt for a long time that to attract better qualified persons to the feld of psychiatry, we would have to compete salary-wise with private practice until such time as there is again an oversupply of medical graduates. I am sure that the mental hospitals have much to do to make their services attractive to young graduates. The development of a total community program around the mental hospital would certainly eliminate many of the professional handicaps of the past.

In closing, may I say that the mental hospital psychiatrists have been greatly disturbed by what they believe is unjust criticism of their professional work. Ten years ago we might have accepted this. criticism without response as it would have been justified. Today, however, our mental hospitals are undergoing such a profound and progressive change as a result of the several new developments previously mentioned that we cannot accept this type of criticism as valid. For many years mental hospital psychiatrists have worked to develop public confidence and to achieve the highest possible level of service in the community and in the institution. Much of their achievement has been against great odds. It is time for us to be realistic. We must not wipe out what has already been accomplished. There is room in psychiatry for difference of opinion but we should not permit these differences of opinion to destroy public confidence or to impede the development of adequate services to the mentally ill person, whether his illness is incipient, acute, or chronic. There may be schisms in psychiatric philosophy, but there must be no schisms in service.

# A PROPOSAL FOR A COMMUNITY-BASED HOSPITAL AS A BRANCH OF A STATE HOSPITAL <sup>1</sup>

#### WILFRED BLOOMBERG, M.D.2

On any given day there are, in the publicly supported hospitals for mental diseases of this country, between 600,000 and 700,000 patients. An enormous number of these patients have been hospitalized for many years. There is repetitive evidence that once a patient has remained in a large mental hospital for two years or more, he is quite unlikely to leave except by death. He becomes one of the large mass of so-called "chronic" patients.

If one believes, as I do, that this "chronicity" in mental illness is a reflection, not of the nature of the disease, but of the attitudes of family and community, and, later, of the structure of the hospital and the methods by which we care for such patients, one is confronted with a problem which many of us as psychiatrists have refused to face realistically. I am aware of the progress that has been made in many places in creating movement among this group of so-called chronic patients. From the time of Dr. Abraham Myerson's "total push" technique to the recent emphasis on "remotivation," many and varying efforts have been made. Tranquilizing drugs, physical methods, group psychotherapy, modification of wards into "therapeutic communities," patient self-government, and many other devices have been advocated with greater or lesser enthusiasm as a means of moving such chronic patients out of the hospital. And, unquestionably, all of these methods have some effect. The enthusiasm of a young staff member who builds a team in a "back ward" and succeeds in improving the behavior of the patients and getting 5 or 10% of them home is commendable and unquestionably socially useful.

I say, however, that we are unrealistic in our approach to this problem because we have not given sufficient thought to the next 600,000 patients who will be admitted to our hospitals. We cannot, of course, ignore our responsibility for the care and the treatment, so far as we know how to administer it, of the patients we already have. I suggest that we have an even greater responsibility to the patients who will be coming to us in the next few years to use all the knowledge that we already have to prevent them from becoming a second group of "chronic" patients numbering 600,000 to 700,000.

Even as psychiatrists we have suffered from the limitation of tradition. We were so convinced that schizophrenia is a longterm chronic illness that when we began to see, during the war, large numbers of acute schizophrenics evacuated from theaters of operations and apparently recovered by the time they reached the zone of the interior, we decided they were not really "schizophrenia." Instead of realizing that this, too, might be schizophrenia, seen in an acute phase because patients were under observation early, were exposed to exaggerated stresses, and could not be carried along for many months by indulgent families, we decided that this must be a different kind of disease because it wasn't chronic. We refused to draw conclusions about schizophrenia as a disease from the things that we were seeing.

It has been shown over and over again, in many different and disparate places, that with proper staffing and proper facilities, 85 and even 90% of first admissions for mental illness can be returned to their homes and their communities in 4 to 6 months. As a matter of fact, when we look at the situation clearly in the light of our overall medical knowledge, we should be proud, as psychiatrists, to be able to point out that of all the so-called long term chronic illnesses, the mental diseases seem to be the most reversible. Our internist colleagues have not yet discovered how to replace the damaged kidney cells in a chronic nephritis, or the damaged liver cells in a cirrhosis of the liver. They are quite content with their

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Commissioner, Connecticut State Dept. of Mental Health, Hartford, Conn.

accomplishments if they can, by drugs, keep a hypertension down within certain clinical limits and have not yet told us how to reverse whatever process that it is that causes hypertension. Physicians have even been content, in recent years, to produce symptomatic relief of hypertension by carrying out enormously extensive operations on the sympathetic nervous system. No surgeon I know believes that he can cure all patients with cancer.

Yet, for many of our psychotic patients, within a comparatively short time, an adequate and at least apparent complete reversal to normality can be obtained. I think we must concentrate more of our efforts, therefore, on these problems of the acute psychosis at a time when it has still all the likelihood of reversibility and before any of our iatrogenic operations force it into the mode of "chronicity."

Our typical public mental hospitals are over large, their social standards are artificial and total, they are isolated, they perpetuate ostracism of patients and personnel. I submit that we need to get our hospitals back to the communities from which the patients derive. A hospital built in the community would be more like a general hospital in the attitude of the community toward it. It seems to me we must begin to recognize that hospitalization for mental illness is only part of the total range of services which we can offer to our patients. In the average physical illness a patient sees his family physician in his office or if he is too ill to get out of bed, the family physician comes to his home. Treatment is started ordinarily either at home or in office visits. Early diagnostic and laboratory tests are carried out on this basis. It is only when the tests become too complex or when the illness of the patient becomes too severe that hospitalization is made use of. And clearly, in this instance, hospitalization is for as brief a period as is necessary to accomplish the elimination of the specific factors which required it: and not for definitive treatment of the disease. As soon as the need for bed care and specialized nursing techniques or the need to carry out special laboratory procedures which can only be done in a hospital is over, the patient is again returned to his home and the treatment is continued at home or in the doctor's office on the basis of the information gained during the brief hospitalization.

I submit that we must begin to treat our mentally ill patients in the same way Because the State has for so long a time accepted the responsibility for the care of the mentally ill, it is probable that most such patients will be treated in cutpatien? departments of state hospitals rather than in private psychiatrists' offices. Then, too, as we all know, there are an insufficient number of private psychiatrists for the need. However, whether in an outpatient department of a state hospital or under the care of a private psychiatrist, the situation should obtain that treatment can be started and diagnosis established insofar as possible without hospitalization until such time as a brief hospitalization becomes necessary. This hospitalization should be merely an incident in the overall care of the patient, and should be available to the patient whether the physician carrying out the outpatient treatment is a state employee or a private psychiatrist. On release from a hospital the patient should go back, either to the outpatient department or to his private physician or psychiatrist.

Because of the nature of psychiatric treatment with its need to manipulate the patient's total activities rather than just to see him briefly to prescribe a pill or even for a somewhat longer period for a session of intensive psychotherapy, the legical development for the mental hospital after the outpatient department is the day care center. Only when a patient is unable to be handled on an outpatient level plus a day care level, should 24 hour hospitalization be sought.

All of these things can take place much more effectively if isolation of the patient can be avoided and he can be treated in the community in which he lives. Day care becomes easier if the patient does not need to be transported 14 to 40 miles from his home to the hospital every morning and then brought back every night. Families can visit patients when they are hospitalized in a community-based hospital, clergymen can keep track of their flocks, local family doctors can follow their psychiatrically ill patients just as they follow their medically

or surgically ill patients who are admitted to a hospital. One of the not inconsiderable gains, I think, of this technique might well be that a family would find it harder to change the family constellation and close up the space left by the hospitalization of one member of it if that hospitalization occurred in the community and the family was visiting frequently. We are all aware of how often the remaining family closes ranks after a patient is hospitalized at a distant place in a state hospital; and even when he is ready for discharge there is no longer any place for him in the family constellation. I need not remind this audience that in a recent survey it appears that 40%, at least, of patients who have been hospitalized in state hospitals two years or longer never have a visit from a member of the family.

A community-based hospital of the type I think of would have certain other advantages. Most American communities have now developed a whole series of resources in the way of social agencies that could be brought to bear upon the problems of patients in a community-based mental hospital. Family agencies, recreational agencies, agencies to deal with the elderly, agencies to deal with the problems of old age assistance and of dependent children, all of them are available in our communities and should and could be made use of. Furthermore, such a community-based hospital could and should be built contiguous to the general hospital that serves the local community. As psychiatrists, we have wasted altogether too much of our highly-specialized psychiatric time in dealing with non-psychiatric problems, the handling of which actually many of our colleagues are far better fitted for than we. I see no reason why we should operate in our hospitals laboratories and X-ray departments and operating rooms if we can build our hospitals across the street from the general hospitals which do this part of the medical job much better than we do.

I am convinced that a community-based hospital of the type I have described could, in 75-100 beds, take care of the same case load as a 300-bed building on the grounds of a distant state hospital. I believe that with this kind of a plan we would begin to

meet our obligation and our responsibility to prevent the development of chronicity in acutely ill psychiatric patients and we would offer the full range of psychiatric knowledge to the community at a place where it could be most useful to the members of the community.

Yet I spoke above of the 600,000 patients now in our hospitals. While we must begin to think of the next 600,000 we should by no means ignore our responsibility to the 600,000 we already have. The level of care of these patients must not be permitted to deteriorate. If we separate the communitybased hospital from the large existing state hospital, we will merely be accentuating the isolation in which the large hospital already lives, will cut down the interest of staff who work in such a hospital and, in fact, even their willingness to accept employment in such a place and will, in the long run, be neglecting one part of our job in order to concentrate on the other. It is proposed, therefore, that the community-based hospital I have been describing should be established, not as a separate and autonomous institution, but as a "branch" of the parent state hospital. I would imagine that most states have a situation similar to ours in Connecticut. Perhaps not, but at least analogous. Connecticut has a population of two and one-half million people. We have 9,000 patients in residence in our State hospitals at any given day and over 4,600 admissions per year, with a comparable number of releases. It is true that Connecticut is an urbanized and industrialized state, but in any case, for Connecticut the statistics are as follows: 75% of all admissions to our 3 large state hospitals come from ten urban groups of population 25,000 and over and the surrounding feeder communities to these groups. Forty-five percent of all admissions to our hospitals come from the four largest of these groups.

I believe that by establishing a branch hospital, at least in each of the four largest urban communities of the state, we will be able to deal with about 45% of the admissions to our hospitals at the community level. At the same time, for the more rural communities, there would continue to be direct admission to the parent hospital which would thereby be encouraged if not

required, to continue to operate acute intensive treatment and receiving services for these patients who did not go to the branch hospital. The fact that the branch hospital was under the administrative control of the superintendent of the parent hospital would mean, it appears to me, that the level of treatment at the acute phase would continue to be high in the parent hospital as well as in the branch and that there might be, for training and other purposes as well as for research, a free interchange of personnel between the two institutions. It would further mean that the transfer of patients from one institution to the other or back again would be facilitated. It would seem to me that this is the only way in which we can avoid destroying our large hospitals at the same time as we develop newer techniques for the acute psychotic and his treatment in his own community. It seems to me that the inherent logic of this situation and modern psychiatric treatment theory lead inevitably and naturally to this kind of development.

The existence in the Connecticut state hospital system of a building over 70 years old, obsolete and dilapidated, and needing to be replaced, has given us the opportunity to try to put this concept into practice. After considerable discussion, the Board of Mental Health and I have recommended

and have introduced a bill into the Legislature to that effect: that this dilapidated building, housing 300 patients, be tern down and replaced, not on the grounds of the parent institution, but by a branch hospital of 75-100 beds with necessary outpatient, day care and night care services, physically located in one of the urban communities served by the parent hospital and contiguous to a general hospital in that community. I do not, of course, know if we will obtain the money for this purpose in this session of the Legislature. But we are committed as a Department to this policy and have the agreement to this commitment of various State officials so that it seems to me only a matter of time before we can try this concept out, at least on a pilot basis.

We would hope that this branch host tal would be in one of the four largest urban communities I spoke of. For a second one of them, we have proposed, though it has not gone so far as the first proposal, that we establish in the community as a branch of the parent hospital a fairly extensive outpatient service supported by day care services, but without any beds at all. With the approval of our General Assembly and our Governor, we hope in a comparatively short time to be able to report to you whether our concept and movement in this direction is sound or not.

# THE STATE MENTAL HOSPITAL IN TRANSITION 1

### FRANK F. TALLMAN, M.D.2

One-hundred and twenty-two years ago Dr. William M. Awl, one of the founders of the American Psychiatric Association, included in the first annual report of the Ohio Hospital for the Insane the following:

The importance of remedial means in the first stages of insanity, can not be too strongly impressed upon the public mind. That morbid excitement in the brain which accompanies the disease by long continuance, too often induces a change of structure incompatible with the future scundness of intellect, and renders the resources of medical science of little avail, except as palliatives.

These facts are entitled to consideration, as indicating the proper course for arresting individual suffering. They are important also, in a pecuniary point of view. The sooner patients can be cured and discharged, the less expense to both friends and the public.

The search for "remedial means in the first stages of insanity" is still not over, and although we have knowledge that was not available to Dr. Awl, there is still much to learn. State mental hospitals are today, as they were then, concerned about their development. Transition is uncontrovertably taking place. but for some the direction is unclear and the destination is in question. There are those who may think that the proper future for the state hospital lies in its summary extinction. There are others who believe that the destination of transition should be a hospital that satisfies the medical and psychiatric needs of all its patients. It would appear that the proponents of the latter point of view have been active in guiding and helping the state hospitals toward their chosen goal. Adherents of the former theory have not provided convincing blueprints for action in the immediate present that appear any surer of success than those now being followed. Strong leadership has come from our own Society, from the National Institute of Mental

Health and from various public and private organizations concerned with the problem presented by the mentally ill. Certainly no organization has made it evident that they thought the plan of choice was to liquidate the hospitals or turn them over to some non-medical group. The position that this paper takes is in agreement with those who believe that the state hospital is becoming and will increasingly become a place where hospital psychiatry of a professionally high standard will be practiced and that their disappearance will be through their own evolution not dissolution.

The following material cites some of the evidence in support of this hypothesis and is, in the main, a topical account of progress during the last decade. The figures and facts show great improvement; that there is still a long way to go is uncontrovertible, but one must not forget that nothing succeeds like success, and one improvement inevitably leads to a further advance. Growth in program is a healthy infection that spreads at an irregular pace—but it spreads.

Certainly in these 10 years, state hospitals have demonstrated their growth and vitality through significant gains in a number of categories, but perhaps their greatest demonstration of growth is in the remarkable change of attitude that these years have seen. The hospitals now have renewed hope and enthusiasm. Those who have attended the mental hospital institutes must be aware that there is a very different attitude expressed by the membership now than at the first one, and there is no reason to believe that this progressive and courageous feeling will not strengthen and grow.

Increase in hospital personnel has been considerable. When the figures in Tables 1 and 2 are translated into staff per patient ratio they add another dimension to our perspective.

The figures are indeed encouraging, although they are obviously far short of APA minimum standards.

Annual expenditure per patient in 1948

<sup>&</sup>lt;sup>1</sup> Read at the 115th anoual meeting of the American Psychiatric Association, Philadelphia, Pa., April 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Professor of Psychiatry, School of Medicine, University of California, Los Angeles 24, Calif.

TABLE 1
PERSONNEL EMPLOYED FULL-TIME IN STATE MENTAL HOSPITALS

	1948	1957	% increase
Physician	2,135	3,759	76
Psychologist	213	805	277
Social worker	676	1,442	113
Graduate nurse	3,961	7,562	90
Other nurse and attendant	48,941	87,984	71 •
All full-time employees	88,890	160,693	80
All other professions	886	2,313	106

TABLE 2
STAFF-PATIENT RATIO IN STATE MENTAL HOSPITALS

	1948			1957	% improvement	APA Minissum Standards	
Physician	1:	258.8	1:	161.4	37.6	1:	30
Psychologist	1:	2,157.0	1:	673.3	68.8	1:	100
Social worker	1:	679.6	1:	375.9	44.6	1:	81)
Graduate nurse	1:	116.0	1:	71.7	38.1	1:	5
Other nurse and attendant	1:	9.4	1:	6.2	34.0	1:	4
All full-time employees	1:	5.2	1:	3.4	34.6		
All other professions	1:	518.5	1:	234.3	54.8	1:	40

was 1.81 and in 1957 was 3.65 which is an increase of 101.7. Total expenditure for the operation and maintenance of public hospitals for the mentally ill in 1948 cost \$316,-118,370 and in 1957, \$732,180,096, which is an increase of 131.6%.

Some of this increase in expenditure is accounted for by inflation and the 13% that the average resident hospital population increased during the same time, but public expenditure has risen in significant excess of the amounts necessary to cover these two factors. These statistics are introduced to illustrate an operational trend and do not pretend to be inclusive. Legislatures in the main are assuming more adequately their clear responsibility in this matter somewhat better than their psychoanalytic and psychiatric counterparts. Very commonly hospitals cannot spend the money provided them for doctors, and it is therefore difficult to expect the laity to continue to be more effectively concerned about the solution of a medical problem than the specialty

At the beginning of this decade the use of insulin as a therapeutic tool was rapidly decreasing, largely because of the advent

of the less expensive electroshock therapy. Then psychosurgery became a frequently used treatment method, but the irreversibility of the treatment hastened the natural process of evaluation and discrimination. Recently chemical tranquilizers have some into general use, and the early utopian optimism of their exponents is already giving way to a more cautious attitude. Until we have more facts about the causes of mental illness we can expect palliative measures to be overemphasized, overused and overvalued, but with each new method tried, knowledge has increased. It is noteworthy that few of the methods cited have been completely abandoned. However, it is only human to think magically and impulsively in terms of a paracea that will solve all our patients' problems and our own. The immense volume of research literature attests to the investigatory stimulation provided by each new treatment method that appears in our amamentarium. Optimism is an essential ingredient of progress and so is excited enthusiasm.

Examples of the multiplicity of the newer treatment methods in use include group therapy, milieu therapy and the therapeutic

community, techniques that are now part of the therapeutic fabric of many state hospitals.

Another encouraging evidence of clinical growth is the rapidly expanding use of open wards and open hospitals. Movement towards the latter is not as rapid as modern psychiatry would dictate, but the trend is evident. Obviously, physical restraint in the form of locks and jackets has not completely disappeared, but in the last 10 years there has been an encouraging decrease in their uses in the treatment of the mentally ill. The establishment of day and night hospitals, a logical outgrowth from the older but expanding OPD programs is clear evidence that those who are responsible for the treatment of the mentally ill have become more secure and thus more courageous in psychiatric practice than they were a decade ago. It would seem that these facilities should make it possible to bring the rural hospital into urban centers at a minimal capital and operational cost. There seems to be no valid reason why a rural state hospital could not extend its services in this manner and thus avail itself of professionals who could not take the time and effort needed to travel to the rural community. One of the great advantages of day and night hospitals lies in the fact that patients being treated in these facilities do not have their defenses completely shattered by total removal from their families and from their ordinary social and community relationships. Total dependency is one of the reasons why institutionalized patients so quickly develop a serious and disintegrating disease in addition to their original illness. There is as yet not an accepted name for this illness, but with some accuracy it might be called "hospitalosis."

The attitude of state hospital systems towards research has shown a remarkable change in recent years. States are not only providing money for research but are appointing research directors at high administrative levels. Examples of this are New York, Ohio and California. Research programming is still in its infancy, but the significant fact is that the infant is lusty and growing. The following table of grants awarded by the National Institute of Mental Health to state mental hospitals illus-

trates this fact which, by the way, is particularly evident in the year 1958 and in the last figure which represents three months of 1959:

TABLE 3
RESEARCH GRANT SUPPORT IN
STATE MENTAL HOSPITALS

Fiscal Year		Number	Amount
1948		1	7,000
1949		1	7,000
1950		2	14,540
1951		5	31,475
1952	•	6	75,830
1953		6	68,975
1954		8	123,229
1955		8	119,194
1956	:	8	117,751
1957.	,	20	515,977
1958		49	1,152,470
1959 to	date	53	1,529,089
		$\overline{177}$	3,762,530

When a legislature, burdened with the need to provide very large amounts for state hospital maintenance and operation, provides money for research, one can safely assume that the hospitals in that state will increasingly become centers for science and treatment, thereby attracting and keeping personnel.

The mutually indispensable cooperation between universities and state hospital systems is increasing. The fact that the university is beginning to see the state hospital as a great human laboratory and that the state hospital is viewing the university as a source from which it can expect practical help in its efforts to become professionally adequate is perhaps the most important single sign that the tempo of progress is quickening.

The National Institute of Mental Health reports the following figures covering training grants provided state mental hospitals for the years 1948 through three months of 1959. The monies alloted are increasing, particularly in 1958. If awards continue at the rate reported for the three months of 1959 it will be an obvious leap forward in this all-important activity.

In the area of training there are two related activities that are particularly encouraging. Inservice training is replacing the old learning on the job method which operated on the supposition that an em-

TABLE 4
TRAINING GRANT SUPPORT IN
STATE MENTAL HOSPITALS

	0	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•
Fiscal Year		Number	Amount
1948		1	10,160
1949		2	14,792
1950		6	43,281
1951		6	53,841
1952		9	69,600
1953		5	49,832
1954		7	46,930
1955		5	56,956
1956		6	60,481
1957		8	90,382
1958		7	116,771
1959 to	date	13	207,610
1000 10	uate		820,636
		75	020,030

ployee would be proficient if he learned what his preceptor knew by the time this worthy functionary was ready to retire. Organized inservice training for psychiatric technicians is a case in point. Curriculum content is now a far cry from old "Here is your rule book and keys-the charge will tell you anything you need to know." Physicians, too, are getting more instruction within the institution, at university centers and in increasing number through attendance at conferences and institutes. The Mental Hospital Institutes have attracted an increasingly large attendance and offer a varied and comprehensive program. The first one in 1949 was attended by 190 participants; the last one in 1958 by 475, which is probably as many from an educational point of view as can be profitably handled at a single institute.

Acceptable residency training programs were, until recent years, a rarity within our state hospital systems. This is not now the case because each year finds more hospitals whose organization, staffing and program warrant approval as residency training centers. Grateful recognition is due the Central Inspection Board and the Committee on Standards and Policies of Hospitals and Clinics for their increasing efforts in this area. Good teaching is admittedly expensive to the institution, but it produces incalculable dividends for the patient because no institution can be a teaching center without benefiting from the benign influence of eager minds in search of answers and older ones trying to find them. It is true that far too few psychiatric residents stay in hospital practice when their training is complete. Men go into private practice (or so they say), in order to make up for the enormous expense of having become special sts and to rapidly expand their standard of living. This obvious reason is open to question. A thorough study of the problem may well reveal that one important cause of attrition has to do with the cultural milieu within the hospital world. Stanton and Schwartz and later Belnap have provided us with excellent beginnings for future study and action. If the residents were emotionally convinced that a staff position within the hospital in which they are being trained would continue to be as intellectually and professionally rewarding as their residency program, far fewer would leave. Hospitals should see to it that the whole organization becomes an integral part of training programs so that this unwholesome dichotomy that the resident with some justice fears does not occur. Perhaps also, the resident is afraid he will become infected by the nihilistic attitudes of staff members who have ceased to progress partly because their most productive years were spent when progress was almost non-existent. When a hospital offers a service unleavened by progressive change and lives in a virtual microcosm, science and indeed the world passes by almost unnoticed. Scientific articles that are read seem to be written for everyone but the reader, and individuals begin to parrot phrases like "yes, but." Happily this attitude is rapidly becoming less evident and more frequently challenged within the microcosmic structure itself. The courageous leadership that welcomed the sociological studies mentioned will undoubtedly give courage to others so that they too will become able to take a close, searching look at themselves and their social structures in the expectation that the result will be reduction in the worrisome process of attrition.

It is important to cite certain activities that have grown out of administration's need to find better ways of dealing with large patient populations. Some hospitals are now being reorganized in an effort to cope with the isolation of patients caused by a combination of size and administrative centralization. The technique used is to

create within the large hospital a number of much smaller units, each one charged with the responsibility of operating, so far as the patient is concerned, as though it were a small hospital. This fresh approach indicates that the experimenters know that it is not possible to make an institution into a treatment hospital using the same administrative structure that existed when it was merely an agency for human caretaking. Administrative workshops, staff conferences and the like are tending to become much more patient centered and in consequence there is a growing awareness that no human being is too sick to improve. This is one reason why back wards are moving forward, and the attendant's key ring is a less distasteful symbol than it used to be. It was not long ago that a psychiatric administrator felt justified in setting his psychiatric knowledge aside when he was faced with what he termed a practical problem. This dissociation is becoming less and less possible, not only because of the growth reviewed here but because of public opinion. We are educating the public, and we now find ourselves in the position of having to act within the framework of the educational material which we taught. We cannot preach the need of a good program and at the same time complacently and rigidly refuse to do our utmost to improve what we have. There is no hospital that cannot be improved if its leadership decides to try. Often a courageous "try" will spark further enrichment of the program through increased legislative support.

There is a rapidly growing awareness of the therapeutic effect of good architecture, not only in terms of walls and their arrangement but in terms of color and furnishings. The old, horrible colors and worse pictures that until recent years were the accepted environment for patients are giving way to emotionally satisfying architectural design and to a decor that provides a lively and pleasing environment that looks alive and vigorous. Ten years ago most wards were furnished by the old, hard, uncomfortable, wooden benches and chairs. These were the trademark of the old mental hospital, but happily they are being replaced with modern furnishings. The layman sometimes asks if this matter of architecture and color

and furnishing is important to the hearth of the mentally ill patient, and indeed one has heard the fear expressed that comfort will only serve to complicate the dependency problem presented by the sick person. This is the kind of thinking that if followed logically, would claim that the way to make a mentally ill person well was to chastise him by prescription.

Since hospitals and communities are becoming less and less frightened of each other, volunteer services have increased to the mutual benefit of both. A volunteer program is a valuable adjunct if it is well managed and if there is reasonable selection of volunteers who participate in a satisfactory training experience. Not only do such programs help patients directly, but they help the institutional culture in its attempt to approach as nearly as possible that found in the world of reality.

Much of the growth that has been commented upon could not have occurred without the intervention of state and federal legislative bodies. Almost everywhere legislatures know that patients do not enter mental hospitals to be kept there for the rest of their lives but come for treatment and discharge. Consequently, the taxpayer, as represented by his legislature, is becoming increasingly willing to provide funds for a treatment program planned in the light of present-day psychiatric knowledge. Once in a while this eagerness and concern of the public may demonstrate itself in ways that some may feel are premature. In other words, public expectation can become greater than present knowledge or personnel can satisfy. Sometimes too a legislature will provide money for specific research purposes that the institution or the organization is not prepared to profitably utilize. This embarrassment is really one of riches to which the response must be an increase of intelligent pre-planning and an improved foresight. It is disconcerting when laymen suggest by such action that we are not doing what our public education implied that we would do if we got money.

State legislation which establishes a firm basis for the establishment of mental hygiene facilities as a joint enterprise between state and local authorities is a particularly noteworthy movement that is sure to grow. This new basis for expansion of service embraces both economic participation and program content and operation. There is, however, a danger inherent in this advance. It would indeed be a serious matter if there were too great a time lag between the passage of such legislation and our ability to properly staff the resultant facilities. A long time lag obviously reduces the community's enthusiastic readiness for mental health progress, but psychiatric staff positions filled either by the partially trained or by substituting personnel from the ancillary disciplines would in the end be a serious mistake. Perhaps the remedy lies in making more use of the doctors in the private practice of psychiatry and psychoanalysis who are more and more showing evidence of their willingness to leave their own consulting room for part-time service in clinics, hospitals and medical schools. Administrators probably do not realize the number of man hours they could acquire if they gave the private practitioner an opportunity for part-time service. It would be sad indeed if those responsible for public mental health programs fail to take advantage of the private practitioners' growing eagerness to satisfy the demands of his superego and the pressure to free himself from the claustrophobic isolation of his office walls.

Historically there has been considerable difficulty in getting medical schools interested in program advancement in state mental hospitals. This was one of the reasons why several state systems developed their own neuropsychiatric institutes in conjunction with universities. It was expected that the institutes would provide stimulation for research and training to both the hospital system and the university. Cooperative ventures in these areas are a most hopeful sign of our psychiatric times. Nothing but good can come from this symbiosis, but here again every possible effort must be made to actively involve the hospitals so that we avoid creating within the state systems small islands of creative progress that are isolated from all the rest. Only a few years ago the idea that there should be directors of research and directors of professional training on the staffs of hospitals and also at the highest administrative level within the department itself was merely a dream. There are several states where in one form or another, this pattern is an exciting reality.

State hospitals are moving towards a much more satisfactory level of scientific operation. It is true that in few if any hospitals the best possible psychatry is being practiced, but it is equally true that a great advance has been made in the last decade. The old traditional institution was to a large extent born of ignorance concerning cause and cure of psychiatric illnesses, but improved psychiatric knowledge is gradually bringing about a n∈w enthusiasm and a new hope. However, it is easier, and for some, more acceptable to think of closing down the facilities presently available and starting all over again than it is to continue what appears to be the more difficult course of bringing to fruition the kind of program that we know is technically possible within the framework of existing structure. It is unlikely that more huge institutions will be constructed, and it can be expected that day and right hospitals, OPD clinics and small psychiatric units in general hospitals will ultimately replace the state hospital as we know it today. However, the basic impetus for movement in this direction stems from the state hospitals themselves. It would be foolish to kill the goose that lays such fertile eggs as those just presented for consideration. Look what has been hatched in these ten years! We must not forget that if the state mental hospitals are to ultimately cisappear it will be because the hospitals themselves demonstrate by experiment and example many of the techniques that will ultimately bring about their dissolution.

This discussion would not be necessary if the APA staffing patterns for psychiatrists had been achieved. This is indeed a critical problem but we can look for significant improvement because the process and content of transition is rapidly preparing the setting necessary to attract an increasing flow of full and part-time men into hospital service.

Turning again to Dr. Awl and to 125 years ago, it is noteworthy that his Board of Trustees made a memorable statement when they voted to build his hospital:

The insane are no longer treated as the outcasts of society, or considered as unworthy of further regard than to be confined in common jails or poorhouses. Their diseases are found to be curable like other disorders of the human system . . . Through the influence of mild and gentle means, without violence in any instance, they readily submit to the requisite treatment, and not unfrequently in short periods of time, their minds become tranquil, alienation ceases, and reason is restored.

Psychiatric wisdom has not yet been able to fulfill the Board's vision, but we have come a long way and the pace is quickening.

#### DISCUSSION

JAMES J. TYHURST, M.D. (Vancouver, B. C.).—There appears to have been a major shift in orientation of psychiatric care in mental hospitals. What form should the inpatient services of the future take? Briefly, these trends would suggest first, that the inpatient services be seen as an aspect of community mental health services rather than vice versa; second, that the services be in centers of population and integrated with other medical services; third, that the services provide treatment close to the patient's place of residence on a regional basis; fourth, that the hospitals be of a small size, so as to maximize the opportunities for the development of the therapeutic community and for adequate therapeutic administrative activities.

Generally speaking, it would seem that this description applies most readily to the psychiatric unit of the general hospital, which fulfills most of the requirements for the regionally located psychiatric inpatient services.

As far as the mental hospital is concerned, where it fulfills the above criteria of small size, appropriate regional placement, and relation to medical facilities, it could well serve as the basis or as an essential ingredient in a community program. Otherwise, their use might be in several directions—first, they might provide the domiciliary care units of the future; second, they may themselves be converted into general hospital units or for units for long-term active care.

The disadvantage of most of our mental hospitals on this continent should be clearly recognized—

1. Size, structure and organization are unsuitable. 2. They are geographically and socially isolated. 3. They are not integrated with other medical services. 4. They are unable to provide continuity of care. 5. Many of the problems over which the staff spend a great deal of time are pseudo-problems based upon the inadequate physical structure and plant, upon the geographic and other isolation, and by the necessity to treat masses of patients with small numbers of personnel.

# THE STRUCTURE AND FUNCTION OF THE PREDOMINATING SYMPTOM IN SOME BORDERLINE CASES <sup>1</sup>

## LEO H. BARTEMEIER, M.D.2

The patients to be discussed have been in treatment with several psychiatrists and psychoanalysts for several years without any appreciable improvement. The mental illnesses from which they suffer are characterized by a persistent physical symptom which is accompanied by anxiety. It is also characteristic of these patients that they feel desperate, are fearful of losing control over themselves and complain that they are hopelessly ill. Although they are also subject to insomnia, headaches, and other symptoms their attention is constantly focused on a central symptom and all else in their lives is of far less importance. It is as though they regard it as highly dangerous and that they have to keep watching it so that it might not overwhelm them. It is this steady resistance that showed the necessity of joining with them for the purpose of learning what one could about the structure and function of their predominating symptom. Their failure to be benefited by psychotherapy suggests the likelihood that any severe threat to the continuation of their predominant symptom might necessitate their becoming more openly psychotic. The following case reports may be useful in clarifying the title of this paper.

Case 1.-A 25-year-old married woman who was referred for treatment because of an impairment in her vision which had its onset several days after she had given birth to her second son. Everything in her environment appeared shadowy and as though she were looking through a screen. Her eyes felt strained and her inability to see objects clearly caused her to feel hopeless, depressed and desperate. She cried frequently, spoke of suicide and complained of having lost interest in her husband, her children and her home. She was a rather pretty woman with a child-like facial expression and rather large eyes for which she had often been complimented. She was restless and afraid to be alone. Her husband, who

was 3 years older, was successful in his business, was more educated than his wife and had been reared in a higher social stratum of the community. He appeared to be somewhat detached from his wife, reacted to her illness with very little feeling and carried out his responsibilities to her and their children in a business-like manner. The patient was an only child whose parents were said to have been sexually promiscuous throughout their marriage. Her father, who had died some years previous to the patient's illness, was engaged in an occupation which necessitated his frequent absence from the home. During her adolescence she had often undressed her mother whom she would find intoxicated, sprawled across the bed when she returned home from school. These experiences had seemingly intensified her voyeurism and she often phantasied herself undressing and bathing prestitutes or watching her husband having intercourse with another woman. It was thought that her symptom of seeing objects as in a shadow was related to her intense and persistent voyeurism.

She had often been drawn into social relations by her husband but had never enjoyed them. She was envious of him, had never felt much interest in his work and had often wondered whether she loved him and why she had married. She was sexually frigid and avoided intercourse as often as possible. She cared more for their children, but her marriage and her home afforded her very little satisfaction. Her hostility toward her mother was represented in her dreams as houses on landscapes, frozen and covered with snow in the same shadowy light of her daytime symptom. Her mother, who lived at a great distance from the patient, was hospitalized because of a prolonged depression during the time the patient was in therapy. Instead of having developed a characteristic and obvious puerperal psychosis it would seem that this patent had withdrawn from her environment through her eyes. Simultaneously her symptom cischarged her instinctual impulses by diminishing the light of all objects in her environment. The structure of her symptom appeared to correspond with the typical neurotic symptom, but because of an unequal compromise between the instinctual impulse and the defense against it the symptom was accompanied by anxiety. .

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> The Seton Psychiatric Institute, Baltimore, Md.

Case 2—A 58-year-old married woman who was hospitalized for the treatment of generalized muscular spasms which were persistent and severe. This symptom had been present for many months and had been insidious in its development. She had been unable to do her housework and had obtained no relief through the intensive psychotherapy she had previously undertaken. This patient was critical and sarcastic with the nurses and expressed her dissatisfaction with whatever they attempted to do in her behalf.

Her muscular spasms and the associated generalized muscular tension were constant throughout her waking life and her symptom became more intense and painful during psychiatric interviews. This aggravation of her suffering occurred during every visit with any physician on the hospital staff. When she left the hospital after a year, her symptom was as severe as it had been on admission.

This patient was the mother of 6 children and the wife of a man who had suffered a mental illness in connection with his military service. Two of the children had schizophrenic illnesses. The patient was raised in an isolated environment in a family having a meager financial income. She was in the care of a physician during the time she had been engaged to be married because of severe insomnia. Some years prior to the onset of her muscular spasms and tension her husband had taken his leave of her by establishing an apartment for himself in the large home which the family occupied. It was finally learned that he had promised the patient that he would never reveal to any one that she had suffered an acute mental illness for which she had been hospitalized many years previously.

It is well known that when cortisone was administered to patients suffering from rheumatoid arthritis, some of them were relieved of their arthritis, but developed schizophrenic illnesses which required hospitalization. After they had recovered from these psychoses their rheumatoid arthritis recurred.

If it had been possible to relieve this patient of her muscular spasms and her painful muscular tension she would have probably experienced a recurrence of her previous psychosis. The structure of her symptom appears to have been similar to the symptoms of rheumatoid arthritis and at the point in time that she was seen a diagnosis of a psychosomatic affection would not have been in error. This patient had no

difficulty discharging her hostile feelings toward other women. With men, however, she portrayed an attitude of suffering and her hostile feelings were intensified during every interview with the hospital physicians, all of whom were men.

Case 3—A 28-year-old single man who wondered whether hypnosis would relieve him of his intestinal spasms and re-establish his control over his flatulence. He had been in treatment with 5 different psychiatrists for almost 3 years. He said that his case had been bungled and that his whole life had been wrecked. He was tall and asthenic in appearance and was restless and apprehensive during the interviews.

Because he had lost control of his flatus he had been unable to work for 3 years and had remained at home with his parents and his younger sister. She had developed a schizophrenic illness one year prior to the onset of his intestinal symptom. He had taken her to a psychiatrist for several appointments. During hospitalization she recovered sufficiently to return home. He worried about her continuing disability. His father had retired from his restaurant business and had died after injuries received during a fall several months previously.

After graduating from high school this patient held several short time jobs and then held a longer position as a draftsman until he enlisted in the Army. His 3 years of military service included 6 months duty overseas and following his discharge he returned to his former position as a draftsman. One week after he began studying engineering after working hours he became incapacitated because of losing control of his flatus.

The psychological evaluation showed him to be an extremely autistic individual who was almost constantly preoccupied with hostile destructive impulses. He appeared able to maintain some semblance of control through emotional and social withdrawal. The psychologist also expressed the opinion that his symptom enabled him to make a borderline adjustment. Both the psychiatrist and the psychologist regarded this patient as suffering from a latent or incipient schizophrepia.

This patient's predominant symptom appears to have served a function of a different order than the principal symptom of the 2 previous patients. His excessive flatulence afforded a frequent discharge of his hostile destructive impulses. It would seem that through this symptom and the

social withdrawal it necessitated his schizophrenic psychosis was maintained at a level of low intensity. The predominating symptom in this patient was, therefore, regarded as a defensive device which protected him from a more severe psychotic development. This was the probable reason why intensive psychotherapy with this patient had been so unsuccessful.

The symptom of the first patient, which was characterized by seeing all objects in a shadowy light, was also observed in another young mother who awakened in terror from a dream in which she was helpless to prevent the drowning of her daughter. On awakening, her surroundings were in a dense fog. When she discovered that this alteration of the atmosphere was due to something within herself she felt strange and remained in a state of detachment for several days. She said "everything seems unreal and I feel removed and at a distance." This acute disturbance was identical with the way she had felt during the onset of her previous schizophrenic psychosis. She was most fearful she would again become psychotic because of the anxiety aroused by her symptom but this repetition in minature of her psychosis was only transitory. The gratification of her murderous impulse in her dream without distortion by the dream work was characteristic of the predominating symptom in these patients. The feeling of helplessness

which this patient experienced in her dream became distorted in her waking life. Having witnessed her daughter drowning was a visual experience which also became disguised after she awakened. What she had seen in her dream was hidden from view by the fog she saw upon awakening. When this transitory delusion could not be maintained the helplessness she had experienced in her dream was changed into the feeling of being removed and at a distance from her destructive impulse. The persistance of her dream in her waking life provoked her anxiety and the predominating symptom was a transitory psychosis.

### SUMMARY AND CONCLUSION

The predominating symptoms of the patients I have been describing have been accompanied by anxiety and they have served the function of protecting them from further developments of their psychoses. These are the patients whom a descriptive psychiatrist might classify as borderline because they have neither delusions nor hallucinations and are, therefore, not regarded as legally commitable. They are unlike the ambulatory schizophrenias described by Gregory Zilboorg, but they are representative of patients who suffer from the same group of illnesses, i.e. schizophrenias which are modified by a predominant symptom that is associated with anxiety.

# THE PSYCHIATRIST AND THE RELEASE OF PATIENT INFORMATION

#### MARC H. HOLLENDER, M.D.1

In recent years, increasing attention has been focused on the social matrix or groundwork of psychiatric practice, especially as concerns the hospitalized patient. In this connection it is important to examine the relationship of the hospital psychiatrist and the agencies or organizations requesting information and/or recommendations concerning patients or former patients.

Although there is a paucity of literature on this subject, it would seem that the requests for information usually are considered in terms of what data should be imparted and what should not. The following question then arises: Whose agent is the hospital psychiatrist? Is he the agent of the patient, the hospital, the community, the government? This issue has been discussed in detail elsewhere (1). It should be noted, however, that only in private office practice can the psychiatrist be exclusively the agent of the patient. In hospital practice, and especially when the patient has been deprived of his freedom (as in commitment), some of his rights are taken over by others (2). In these circumstances the psychiatrist must represent the state, the hospital, or the relatives, as well as the patient. The effort to protect the patient and to represent him as much as possible has led some institutions to stamp all released data: "Not to be used against the patient's interests." Other institutions attempt to be impartial, while a few assume the role of the agent of the organization requesting information.

Debates as to what information should be imparted or whose agent the psychiatrist should be, serve to obscure an issue of more far-reaching consequence. Instead of asking what should be said, it is reasonable to ask first if anything should be said. The following question might also be posed: Is the hospital psychiatrist oriented to therapy or

<sup>1</sup> Professor and Chairman, Department of Psychiatry, State University of New York, Upstate Medical Center, and Director, Syracuse Psychiatric Hospital, Syracuse, N. Y. to public service or does he believe that he can encompass both objectives?

To discuss this issue, we must consider the effect of imparting information on the practice of psychiatry. What happens if the psychiatrist provides a public service as a fact-gathering and information-dispensing agency? This, and a number of related questions, will be considered.

## TYPES OF REQUESTS

The day after a major fire occurred in the community, the police called requesting information concerning a man employed by the company which had sustained the damage. Because it had been learned that he had been a patient at the hospital, the police wondered if he was a "pyromaniac."

A dean requested information concerning a former patient who had applied for admission to college. Would we provide a diagnosis and recommendations? A similar request was received from a school of nursing.

The following note was received from a member of the Reporting Department of a nationally known credit-rating organization: "Please send proper forms to Mr. K., regarding his giving clearance to (name of company), only and no other parties, to investigate treatment and final disposition of his case."

A letter concerning another former patient stated: "Mr. P (date of birth), has made application with this hospital as a laborer (custodial) . . . We would like to have a summary of his medical and psychiatric condition. You are assured that any information furnished will be held in the strictest confidence."

The Federal Bureau of Investigation requested information concerning a man, reputedly formerly a patient, who had applied for a position in a government agency. Information was also sought in connection with an application for a permit to possess a firearm and in connection with the processing of an application to adopt a child.

Of the numerous requests made by insurance companies, two have been selected as examples. A member of the Claim Department wrote: "We understand that Mr. M has been confined to your hospital . . . May we please have a statement verifying the period

of confinement, and including his condition, prognosis, and any pertinent comments that you might like to give us that might help us to better evaluate the degree of Mr. M's disability. We would also appreciate a copy of your data and case history . . Also, because of the type of Mr. M's illness, we wonder if you would consider him competent to endorse checks and direct the use of the proceeds thereof with a clear understanding of the nature of his acts."

The Medical Director of an insurance company wrote: "Your patient has signed the enclosed authorization. Will you please advise us of the details of consultations during the past five years so that we may determine his eligibility for insurance."

# SHOULD THE PSYCHIATRIST SUPPLY INFORMATION?

It is apparently assumed that many of the requests placed for reasons of insurability, police or legal action, or acceptability for a position or school are reasonable and should be answered. As previously stated, it may be argued then that the information imparted should be selective and in the interest of the patient. While this may be the expedient course of action, it would seem important to question it in light of long-term and far-reaching consequences.

If information is sent out, will the patient see the psychiatrist as his helper or as a possible informer? To spy—and this may not be an unreasonable term—on a patient, runs counter to our usual psychotherapeutic endeavors which aim at understanding and reeducation. In fact, if the patient regarded the therapist as a potential spy or informer, the relationship and treatment process would be markedly altered. This would be true even if the patient believed that information would be furnished only if he gave his written consent.

The argument might be advanced that the hospital psychiatrist possesses information indispensable to others. In certain instances data obtained during the course of psychotherapy might be of considerable value in legal and other determinations. It should be noted, however, that personal history and private feelings will be discussed only if confidentiality is assured. Even if information were to be released only in the patient's interest, he would be encouraged to make "as good a case as

possible" instead of frankly expressing himself.

Persons in fields other than psychiatry are aware of the damage that might result if the psychiatrist attempts to be both therapist and purveyor of information. Two instances will be cited. In a precedent-establishing case in the State of Illinois, a Circuit Court judge(3) declared:

It is conceivable that the courts in a situation such as is presented here today would say, true, you are engaged in the profession of healing the mentally disturbed, the maladjusted members of our society . . . We know that you cannot do it without obtaining the confidence of your patient and getting the information from him. Nevertheless, it is our job to get all the information we can in order to correctly dispose of a case. Therefore, we are going to compel you to disclose those matters which came to you as a result of your confidential relationship and thereby run the risk of such a disservice to society as may rob it of a healing process affecting thousands and perhaps millions of our inhabitants.

My understanding of the law is otherwise. I am persuaded that the courts will guard the secrets which come to the psychiatrist and will not permit him to disclose them. I am persuaded that it is just one of those cases where the privilege ought to be granted and protected. And the social significance or it is probably even greater than that which comes from the protection of the communications between lawyer and client.

In an article entitled, "A Criminologist Looks at Privilege," MacCormick(4) stated:

Giving parole boards access to what is dug up in individual and group therapy would be opening a veritable gold-mine to them. But the shaft of that mine is sealed to them and to institution administrators, and must stay sealed. Prisoners have their eyes always on the day of release and their minds always on what may advance or delay that day. Unless they can be sure that whatever they reveal in therapy will not be reported to the institution administration or the parole board, the effectiveness of psychotherapy will be disastrously impaired and will eventually cease to exist.

The question might how be raised: "Who will provide the information required by schools, employers, insurance companies, credit-rating organizations, etc.? The an-

swer would be that they might hire their own psychiatrist for this purpose. The role of such a psychiatrist then would be clearly defined. He would not obtain data, to be used for decision making purposes, under the guise of helping or treating the patient. As in the case of the parole boards, valuable information, possessed by a hospital psychiatrist, might be withheld to protect the effectiveness of psychotherapy.

# WHAT HAPPENS WHEN PSYCHIATRIC INFORMATION IS FURNISHED?

If the principle that information should be imparted were to be accepted, many questions would still have to be answered. The first would be: Is the information furnished really useful? If it is merely to substantiate the facts of hospitalization for insurance purposes, obviously it is. It might also be of value in exceptional circumstances, such as the one cited involving the deliberations of a parole board. It is another matter, however, if it is to be used in determining employability, acceptability for admission to a school or induction into the armed forces. To predict, in such circumstances, requires knowledge of (a) the person's problem or disorder, (b) the nature of the task to be performed and (c) the relationship, if any, between the two.

If the contradictory testimony of so-called experts in legal disputes is recalled, it should be clear that "facts" can be arranged and viewed in different ways and that conclusions based on them vary widely.

In assessing the patient's problem or disorder, it must be borne in mind that there is a profound difference between psychiatric and (other) medical data. While the latter depends in a measure on information imparted by the patient, it can be obtained largely by physical and laboratory examinations. The former, however, is almost entirely dependent on what the patient is willing to reveal. (Certain profound psychotic disorders would be exceptions.) Since speaking of problems has social implications (in contrast to speaking of the body), the patient may be reluctant to reveal certain pertinent data.

For the most part, the needs of a job or school are understood by the psychiatrist only in a general sense. Because information imparted to the employer or dean of admissions is to determine the capacity of a person to adjust, it would seem essential for the psychiatrist to possess a detailed picture concerning to what the adjustment must be made.

The assumption often is made that psychological problems lower the tolerance to stress. This is based on the concept that a human being can be likened to a machine capable of handling a specified load. Unfortunately, this concept has only a very limited usefulness. Stress must be considered in specific terms because it is well known that what is stress for one person may be lightly regarded by another. Thus, a specific job or a certain college environment may or may not be stressful to a given person. The variables may be so numerous that no one could be certain in advance as to which combination would come to the fore and impinge. Moreover, there are situations in which so-called emotional problems (or patterns) are assets and not liabilities. This led to a seeming contradiction in terms during the war years, when there was the "successful neurotic soldier"(5). In this instance men who had become accustomed to anxiety sometimes seemed to tolerate battle conditions better than some of their fellow soldiers who had never previously experienced much anxiety.

Prediction, in this or similar instances, involves many variables, some known and others unknown, which can be arranged in an exceedingly great number of combinations. Obviously, from the standpoint of prediction there is little similarity between this situation and that of the physicist in a laboratory manipulating a single variable. I(6) have previously compared the psychiatrist's prediction of the emotional reactions of a patient to a surgical operation, to the tout's selection of the winner of a horse race. The most that can reasonably be expected is an "educated" guess. Is this the type of recommendation that we would like to offer in a situation which may profoundly affect a person's future? And if we make a statement, is it clearly labelled as an "educated" guess or is it implicitly or explicitly labelled as a scientific statement?

It could be argued that it is sufficient to supply information which the recipient might use to draw his own conclusions. First of all, the selection of material, like the slanting of a newspaper article, might influence or even determine the conclusion reached. Secondly—and when there is relatively little slanting—how will the recipient do better at decision making than the psychiatrist would? In a sense, instead of being like a tout, he is like a "hunch-player." Could he not do as well, or even better, if he applied his usual method for selection, uncontaminated by data which he understands poorly?

The practice of supplying a label may be the most misleading of all (7, 8, 9). It is assumed that the label, psychoneurosis, defines a disorder much as diabetes mellitus does. But does it? The argument can be adduced that psychoneurosis is merely a pseudomedical term used to describe problems in living, and that, in fact, it could in this sense be applied to every human being (10). Then where are we?

Even the label schizophrenia, which may or may not refer to a medical disorder (i.e., disease of the brain), does not contain within it reasonable grounds for predicting how capable a person will be to go through college or to perform satisfactorily at a job. To use the term in a letter, however, is to stigmatize the person so labelled. Modifying statements usually are of little avail.

In this connection, the question should be asked: "Do the words I write convey the meaning I intend?" Or, "Are my words employed as calls for action rather than as partial forms of information?" Does a word imply one thing to the psychiatrist and another to an employer or dean of admissions?

One situation recently reported will serve as an example of the difficulty which might arise when information is imparted and recommendations are made. Boverman(11) stated:

About three months after her discharge, and at a time when I was observing that she had improved considerably and was operating effectively, she applied for reinstatement at her last job. As a matter of form, her previous employer requested information from the hospital about her illness and her working capacities. Although knowing she was in therapy, the hospital replied, in a several-page letter, to the effect that it was certain she

could not be entrusted in the future with a job because of her severe illness and impairment of judgment. She, naturally, was unable to be reinstated, but within a few weeks obtained a new job of greater complexity and responsibility and has been doing well in it since.

In this instance, incidentally, the hospital acted as an agent for an employer. Boverman did not question whether any information at all should have been released to her previous employer either by himself or the hospital. His point was that the woman was not rehired because the hospital supplied out of date information instead of consulting with him. This example also illustrates the problem which may arise if information derived during a period of hospitalization is used for predicting future performance.

#### COMMENT

It can be inferred from the volume and type of questions asked that it is common practice for the psychiatrist to furnish information to various agencies. Notes in the literature, similar to Boverman's (11), would also seem to bear this out. No doubt the way in which these requests are handled varies. In some instances, the practice may be to respond only to physicians. As previously mentioned, some hospital psychiatrists will provide information if it is "for the good of the patient," and then only if a release form has been signed So-called unreasonable requests (for example, a wife demanding data which might favor her divorce action) are apt to go unanswered, or are answered with a note that no information can be released.

The expectation that requests will be answered and the practice of complying, in part, stems from the general practice of medicine. Too little attention has been paid to the difference in the social significance of data applying to how a person feels, thinks and lives, on the one hand, and to how his body functions, on the other hand.

It may also be that psychiatrists have had too great a need to prove their usefulness as members of society. As possessors of special and secret data (much like the possessor of choice bits of gossige), they can gain recognition, and perhaps even power,

if they are willing to share their possessions with others who can use them. In my opinion, they have even been seduced to claim that they have the ability to foretell the future in a way that no one else can. Thus, "educated" gresses have been dispensed as though they were "sure things."

It is often argued that information is supplied only because the therapist is eager to assist the patient who needs his help. This clearly reduces the patient to the role of the helpless child. What effect, it must be asked, will this have on therapy?

The practice of being both therapist and "public servant" (or informer and/or judge) has appeared in the most unexpected places. For example, the psychiatrist to the student health service at a medical school may function as a special advisor to the grades committee; or training analysts in a psychoanalytic institute may submit reports and make recommendations to the educational committee concerning their analysands.

Whether information should be released, and if so, what kind, must be considered in terms of the context of psychiatric practice. It is only in private office practice that a strictly confidential relationship can be maintained with the psychiatrist (or psychoanalyst) serving as exclusively the agent of the patient. In the hospital setting, a one-to-one relationship is impossible. As discussed in another paper(1), the psychiatrist is often the agent of the patient's family or the hospital as well as of the patient. In so far as the patient is unable or unwilling to assume responsibility and to participate in decision-making concerning the treatment he will receive, this must be taken over by others, usually his family. To function in decision-making, the family must be provided with information. It should be noted that decision-making is for the patient and is concerned with the practical aspects of dealing with his disorder. This stands in sharp contrast to making decisions about the patient's ability to work or attend school after he has been discharged from the hospital. In the latter situation, the focus is on the good of an institution (company, school etc.), whereas in the former, it is on the good of the patient. This is not substantially negated by professions of concern for the patient's future.

It would seem that the hospital psychiatrist will have to decide whether his function is oriented to treatment or to public service. Moreover, the decision reached should be made explicit. To encompass both roles would be possible only if psychosocial problems and psychiatric disorders were regarded as physical illnesses and treated exclusively with medications and physical therapies (electroshock, lobotomy etc.). Psychotherapy, dealing as it does with man's psychological and social life, would be seriously incapacitated if private (or semi-private) information were made available for public service purposes. Eventually, it would become generally known that what a person related concerning himself might be used against him. Or, even if it would only be used "in his best interest," he might be circumspect so that as good a case as possible could be presented in his defense.

Those persons, referred by the courts, for examination for the purpose of determining their "sanity" obviously should not be housed in a hospital. In this instance the institution provides a public service and not a treatment function. It might be likened to a jail in which persons are detained while psychiatrists examine them for the purpose of society.

#### SUMMARY

In this article the relationship of the hospital psychiatrist and the agencies requesting information and/or recommendations concerning patients has been examined. Two questions immediately arose: 1. Whose agent is the psychiatrist? and 2. Is he oriented to therapy or to public service or does he believe that he can encompass both objectives?

The types of requests for information and recommendations were enumerated. It has apparently been assumed that many requests are reasonable and should be answered. The problem then was to determine which ones were reasonable and to decide how they should be answered. It was suggested that the first issue should be that of questioning whether the psychiatrist should supply any information. This was then considered in terms of its effect on

psychotherapy. Obviously, therapy will be altered if the patient sees the psychiatrist as a possible informer as well as a helper.

If information is supplied, is it really useful? This brings us face to face with the issue of how well predictions can be made in instances involving many variables, some known but many unknown, which can be arranged in an exceedingly large number of combinations. Some comments were, also, made on the misleading effect of labelling.

The expectation that requests would be answered and the practice of complying, in part, stems from the general practice of medicine. Too little attention has been paid to significant social factors. It was suggested that psychiatrists might be seduced to claim that they possessed special ability to foretell the future. As a result "educated" guesses might be dispensed as facts.

During a period of hospitalization, the patient's family might have to be provided with information to participate in immediate decision-making. This stands in sharp contrast, however, to making decisions about the patient's ability to work or attend school after he has left the hospital and is assuming responsibility for his own welfare.

#### BIBLIOGRAPHY

- 1. Hollender, M. H., Mann, W. A., and Danehy, J. J.: The Psychiatric Resident and the Family of the Hospitalized Patient. A.M.A. Arch. Gen. Psychiat. To be published.
- 2. Szasz, T. S.: J. Nerv. & Ment. Dis., 125: 293, 1957.
- 3. Fisher, H. M.: J.A.M.A., 150: 1241, 1952.
- 4. MacCormick, A.: Am. J. Psychiat., 115: 1068, 1959.
- 5. Needles, W.: Bull. U. S. Army Med. Dept., 4: 673, 1945.
- 6. Hollender, M. H.: Psychological Factors During the Postoperative Period. *In Artz*, C. P. and Hardy, J. D., Eds.: Complications in Surgery and Their Management. Philadelphia: W. B. Saunders Company. To be published.
- 7. Hollender, M. H., and Szasz, T. S.: J. Nerv. & Ment. Dis., 125: 599, 1957
- 8. Szasz, T. S.: Am. J. Psychiat., 114: 405, 1957.
- 9. Szasz, T. S.: A.M.A. Arch. Neuro!. & Psychiat., 76: 432, 1956.
- 10. Szasz, T. S.: The Myth of Mental Illness. Am. Psychologist. To be published.
- 11. Boverman, M.: A.M.A. Arch. Gen. Psychiat., 1: 235, 1959.

#### THE FOLLOW-UP OF DISCHARGED MENTAL PATIENTS BY THE PUBLIC HEALTH NURSE <sup>1</sup>

FLORENCE A. BEASLEY, R.N.,<sup>2</sup> CLAIRE S. CALLAWAY, M.S.W.,<sup>3</sup>
AND TRAWICK H. STUBBS, M.D.<sup>2</sup>

Public health agencies have for years combatted diseases that threaten the physical well-being of man. Only recently have we seen the beginning of programs to meet public health responsibilities in the mental health field.

Traditionally, the focus in health department activities has been on prevention. We must continue to exert every effort toward the prevention of mental illness even though we must await more specific knowledge in many areas. At the same time, we must lend our efforts also to helping the person who is already mentally ill, and to his family.

The challenge is two-fold: 1. How can we make optimum use of resources to meet the increasing demands for services for the mentally ill beyond the walls of the hospital? and 2. What can a state-wide public health program provide in spite of the shortage of psychiatrically trained personnel? We should like to describe an approach to the problem that has been made in Georgia... a program of public health nursing services to the mentally ill.

The Georgia Department of Public Health, in cooperation with the Milledgeville State Hospital (the only state mental hospital in Georgia) initiated such a program on January 1, 1953, which was designed to serve the families of the mentally ill, and provide partial follow-up services for patients. Full details are available (1, 2, 3). This program began as a pilot project in 6 small, rural counties in the central part of the state with 2 larger, urban counties added the next year. At the end of the second year, 1955, an evaluation was done and this service made a part of the generalized public health nursing program in the state.

Prior to the initiation of this project, it had long been felt that a broad area of

health supervision was being neglected in our pubic health programs by the exclusion of the mentally ill. We felt very strongly that the psychiatric patient and his family faced many of the same kinds of problems that accompany any long-term chronic illness and that public health nurses could be helpful in much the same way as with tuberculosis, cancer, or cardiac conditions. We knew, from personal contacts with public health nurses, that many of them were being called upon by community agencies, by patients and families for varying-kinds of services, but they were not working on any planned program basis in relation to the mentally ill.

It was never intended that the public health nurse do psychotherapy, but that her activities would be more in the area of supportive services. A number of activities in which the public health nurse could function in relation to the patient, the family, and the community were listed, not in the sense of setting limits, but rather as a guide by which she could feel more secure. These were:

- 1. Help the family to accept the patient's illness, his need for treatment, and perhaps hospitalization.
- 2. Interpret the hospital's rules and regulations, diagnostic and treatment procedures.
- 3. Encourage families to allow the patient to remain in the hospital until the medical staff felt that he was ready for furlough or discharge.
- 4. Encourage communication between the family and patient; between the family and the hospital.
- 5. Help the family to accept the patient back into the home and explain furlough or discharge procedures.
- 6. Help the family to return the patient to the hospital if further treatment is indicated.
- 7. Direct the family and/or patient to community agencies if additional services are needed.

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1 1959

<sup>&</sup>lt;sup>2</sup> Georgia Dept of Public Health, Atlanta, Ga.

<sup>&</sup>lt;sup>3</sup> Milledgeville State Hospital, Milledgeville, Ga.

- 8. Promote mental health education in the community.
- 9. Help the community to understand and accept the furloughed or discharged patient.

When we were ready to begin the pilot project, the state hospital designated the social service department as the health department's point of contact with the hospital. Inter-agency referral forms were developed for use by the 2 agencies in exchanging information regarding patients or families.

One of the foremost questions confronting us was how to find the people who were in need of service and establish a case-load for each nurse. All commitments are made through the county Court of Ordinary, and this seemed the logical place to start. Records in the Ordinary's office listed names of patient's committed, but at that time, there was no record of patients who had been released from the hospital. We took the problem back to the hospital and the following arrangement was made:

- 1. The hospital agreed to send to the county health department an abstract of the record of every patient in the hospital or out on current furlough at the time the county started the service.
- 2. The hospital would notify the health department when a patient was released on furlough or discharged, including voluntary admissions.
- 3. Information on newly committed patients would be furnished to local health departments only on request.
- 4. County health departments would arrange with the Ordinary for notification of all new commitments.

This arrangement provided the basic caseload; additional referrals have come from local physicians and from community agencies as the service became known in the community.

Soon after the health departments began receiving referrals, a system of priority for home visiting was established as a further guide for the nurses. The priorities were established in the following order:

- 1. To families of newly committed patients or patients awaiting commitment.
  - 2. To furloughed or discharged patients.
  - 3. To families of patients who could be

furloughed if home conditions were favorable and the family willing.

4. To families of patients considered to be institutional cases.

The frequency of nursing visits has been left to the judgment of the nurse, depending upon the needs of the patient and/or family, or other problems encountered in the home.

Reports of initial visits to patients and/or families are sent to the state hospital; reports of subsequent visits are made only if there is additional pertinent information. The nurse visits patients released from the hospital as "restored" just as she does the patient on furlough, but makes a report on these patients only in the case of recommitment.

As part of the preparation of the public health nurses for beginning this service, a 3-day orientation is held at the state hospital. The nurses observe the various treatment procedures, recreational and occupational therapies, attend diagnostic clinics, and are given lectures on selected topics by members of the hospital staff.

In-service education programs are conducted in local and regional health departments as requested, and consultation from the mental health consultant nurses and other members of the staff of the Division of Mental Health is always available.

As the program develops, the need for more adequate medical and psychiatric supervision for the patients is a problem that is a challenge to the 50 psychiatrists and the 3200 other physicians in the state, as well as to our health departments.

Georgia is a state comprising 159 counties, all but 10 of which have organized health departments. The counties are grouped together into 38 health districts and at the present time there are 26 full time medical directors and approximately 500 public health nurses employed. The expansion of this service into the 159 counties is proceeding. Public health nurses in 49 counties are now offering supportive services to families of newly committed patients, to families of patients already hospitalized, and to patients on current furlough or recent discharge from the state hospital.

Recently, a staff physician at the state hospital remarked,

I had wondered so often why families of many of my patients never visited. Now that we get reports from the public health nurses I find that most of those who don't visit have some serious problem at home, or just can't afford the trips. I feel better knowing it isn't lack of interest.

The clinical director of one of the services stated,

We, in the hospital, are vitally interested in what happens to the patient when he goes home. So much of the time we never know anything unless the patient has to return for further treatment. This program now keeps us informed about the patient after he returns to the community, and we appreciate that.

The social service department summarizes additional benefits,

Since the beginning of the pilot project in 1953, there have been valuable services rendered by the public health departments in the counties in the program.

Due to the education and interpretation given families of patients, there has been considerable increase in the interest of families. This has been manifested by more visiting to patients, more writing of letters, sending of gifts, and also more acceptance of the patients' returns to their homes.

Reports sent to the hospital by the public health nurses have been of great value to the medical staff. This information has given the staff a better understanding of the home situation and other environmental influences, and has been particularly helpful in the study of a case when the patient is being considered for furlough.

When the hospital has been unable to obtain a social case history in their routine procedures, the public health nurses or the local Department of Public Welfare have assisted the families in filling out a questionnaire summary.

The nurses' services have been valuable regarding the status of the next-of-kin. When a change in the next-of-kin is indicated, the hospital notifies the Ordinary of the patient's county of residence asking that another next-of-kin be designated. This information is very important to the hospital in the case of illness, furlough, or death.

Let us now look briefly at another program being developed in Georgia in which public health nurses are actively involved in follow-up services to mental patients and their families.

On July 1, 1957, funds were made available to the Georgia Department of Public Health by the Governor for the development of a program of intensive treatment of mentally ill patients in psychiatric units of general hospitals (4, 5). Patients are referred to the local health departments by their own physician or other appropriate medical sources. If certain financial and medical eligibility requirements are met, the application is accepted and the patient sent to the participating hospital nearest his home. Tax monies appropriated for this intensive treatment program are administered by the division of mental health; treatment is the responsibility of the three participating hospitals and their psychiatric staffs.

In this program, the public health nurse offers the same kinds of supportive services to patient and family as she does in the program just described. The major differences are:

- 1. Frequently, the nurse has more contact with the patient and family prior to hospitalization, during the waiting periods of non-emergency admissions.
- 2. Application for treatment must be made voluntarily.
- 3. Expansion of nursing services in the state hospital program is on a county by county basis. Applications for treatment of patients in this program are accepted from all counties, therefore many nurses are involved in follow-up services earlier. During the first year, applications were approved for 290 patients in 79 counties for the intensive treatment program.
- 4. Since all admissions are on a voluntary basis, there is less chance of the nurse being viewed as someone "spying" for the hospital.
- 5. In addition to other reports, a specific report is made to the division of mental health at a specified interval following the patient's hospitalization.

The mental illness-mental health problem is a tremendous one regardless of how it is approached. The shortage of resources is emphasized in the third annual report of the Joint Commission on Mental Illness and Health (p. 6)(6):

We have not found a community that has all the services needed in the mental health field, and one inevitable conclusion from any survey will be the need for the creation of new services, or expansion of existing ones, both in quality and quantity of service. This finding leads us to the major inconsistency in our whole programming in this area; namely that manpower is not and will not be available for these new and expanded services.

We do not feel that we have the answer, but the programs just described are filling a need in this state. Furthermore, such programs point up a way of applying current concepts that emotional illness involves not just individuals, but cultural and environmental influences in the family and the community.

We are poignantly aware of the fact that if such programs continue to be developed over the country, some changes will probably be needed in nursing and medical educational programs in order to prepare more adequately the practitioners for the roles expected of them. At the same time, in-service educational programs must continue to supplement the educational needs of all levels of departmental staff.

#### SUMMARY

The Georgia Department of Public Health, in cooperation with the Milledge-ville State Hospital,<sup>4</sup> initiated a program of supportive services by public health nurses to mental hospital patients and their families in January, 1953. This program was not limited to the discharged patient, but included the patient and family at the time of commitment, during the patient's hospitalization, and after discharge to the community. At the end of 2 years as a pilot project, the program was evaluated and this activity included as a part of the generalized public health nursing program

state-wide. It is now operating in 49 of the state's 159 counties.

A second program is presently being developed as a part of a state-aid program for intensive treatment of mentally ill patients in general hospitals. Essentially the same kinds of supportive services are offered to patients and families by the public health nurses.

These programs are ways of applying the current theoretical emphasis that emotional illness involves not just individuals, but situations and relationships in families and communities.

As modern public health programs seek to deal seriously with the problem of mental illness, a balance must be maintained between services to the sick and preventive and health promoting activities for total populations. The present program of the Georgia Department of Public Health, overlapping both areas, offers opportunity for continuing development of public health programs on a sound basis of experience which bridges gaps between hospital and community.

The development of newer programs and the involvement of public health nurses in a broader scope of health services raises many questions for those interested in the preparation of future public health nurses as well as the continuing education of those currently employed.

We believe this type program, modified to fit the special situation in each state, will be an important element in the total resources for offering follow-up services to the mentally ill.

#### BIBLIOGRAPHY

- 1. Beasley, Florence A.: Nursing Outlook, Vol. 2, Sept. 1954.
- 2. Beasley, Florence A., and Rhodes, William C.: Nursing Outlook, Vol. 4., Aug. 1956.
- 3. Rice, Guy V., Jr.: Am. J. Pub. Health, 47: 1, 1957.
- 4. Stubbs, Trawick H.: Georgia's Health, Vol. 38, No. 4, Apr. 1958.
- 5. Stubbs, Trawick H.: J. Med. Assn. Ga., Vol. 47, No. 10, Oct. 1958.
- 6. Third Annual Report, Joint Commission on Mental Illness and Health, Cambridge, Mass., 1958.

<sup>&</sup>lt;sup>4</sup> The Milledgeville State Hospital was transferred, by Executive Order, from the Department of Public Welfare to the Department of Public Health on April 24, 1959.

#### CLINICAL NOTES

Recommended Reading—"Trials and Tribulations" by A. A. Baker, M.D. and J. G. Thorpe, Ph.D. in the October issue of the Journal of Mental Science, p. 1082.

#### EFFICACY OF TRIFLUOPERAZINE IN CHRONIC MENTAL ILLNESS

#### ROBERT B. CAHAN, M.D.1.

This is a report on a rigorous 8 month study constructed to test the efficacy of trifluoperazine <sup>2</sup> (Stelazine) in a ward population of chronically regressed elderly female patients. Thirty women were chosen because they were not then receiving any tranquilizer. Age range was 58 to 88, averaging 72. Average length of hospitalization was 20 years. Twenty-two patients were classified as having chronic varieties of schizophrenia, 6 chronic brain syndrome, and 2 had manic-depressive psychosis, manic phase.

A doubled blind key <sup>3</sup> was constructed to divide the group into placebo and drug groups. Initial dosage was 2 mg. b.i.d. raised by increments of 2 mg. daily at intervals of 10 days to 2 weeks. Preliminary weights, liver profiles, hematologies, vital signs, and target symptom interviews were obtained.

At the end of 4 months all patients had reached 24 mg. daily except those who had their medicine discontinued because of serious side effects. Two patients, both on Stelazine, were improved; and 3 were slightly improved, 2 on placebo and 1 on Stelazine.

The second phase of the study was begun by starting on Stelazine (2 mg. b.i.d.) those patients previously on placebo. Patients previously on Stelazine were continued on their previous dosage. Two patients were considered to have had side effects of such severity from the first trial of Stelazine that restarting the drug would be an excessive risk. One patient who had been on placebo only died during the first 4 months. The remaining 27 were placed on a progressively increasing dosage scale as

before. Some patients reached as high as 45 mg. daily, but most were leveled offat lower amounts in an effort to control serious side effects.

At the end of 8 months, 3 patients had "improved," 3 had "slightly improved," and 23 patients showed no noticeable or consistent change in ward behavior or mental status. Of the 6 improved, none had lost their grossly psychotic reactions. These 6 included the 2 patients with manic-depressive psychosis, and 4 with schizophrenia.

The only side effects definitely attributable to the Stelazine in this study involved muscular dysfunction. Eight patients were seen to develop a typical Parkinsonian syndrome with onset of incapacitating symptoms at dosage ranges of 10 to 17 mg. daily. This group included 2 of the 3 "improved" patients and 2 of the 3 "slightly improved."

Seven patients developed a severe, progressive, generalized muscular weakness of central nervous system origin with onset at dosage ranges of 6 to 17 mg. daily. No localizing sign or pathological reflex was noted on examination, but 2 of the 7 women had an early associated relaxation of the pelvic floor. An eighth patient developed a prolapsed uterus without generalized muscular weakness, the pelvic floor manifestations occurring at 6 to 14 mg. per day. None of the patients with muscular weakness was psychiatrically improved.

#### Conclusion

Trifluoperazine is considered to be of limited usefulness and considerable toxicity in an elderly female population.

The 8 patients with increased muscular rigidity having 4 of their number improved by Stelazine should be contrasted with the absence of psychiatric improvement among the 8 women with muscular weakness. Investigation of this phenomenon may reveal

<sup>&</sup>lt;sup>1</sup> Norristown State Hospital, Norristown, Pa.

<sup>&</sup>lt;sup>2</sup> Supplied as Stelazine by Smith, Kline and French Laboratories, Philadelphia, Pa.

<sup>&</sup>lt;sup>3</sup> Key arranged and conducted by William P. Boger, Director, Department of Research Therapeutics, Norristown State Hospital, Norristown, Pa.

clues to the operation of trifluoperazine.

On the positive side, no agranulocytic, hepatotoxic, or biliary static effects were noted. A therapeutic agent which can improve the ward management of one-fifth of the severely and chronically ill patients should be considered as part of the psychotherapeutic armamentarium.

#### EFFICACY OF DIVIDED AND SINGLE DOSE SCHEDULES IN INSULIN COMA THERAPY

ARNOLD G. BLUMBERG, M.D., PETER LADERMAN, M.D., AND MAX FINK, M.D.<sup>1</sup>

While many technics for the administration of insulin in insulin coma therapy have been advocated(3), recent reports(4) have assessed multiple divided doses as more effective and safer than other methods. Previous studies indicated that the production of coma was directly related to the level of hypoglycemia and its duration (1) and that deep coma for sustained periods was essential to the treatment result in insulin therapy (2, 3). It seemed reasonable to test the suggestion of increased efficacy for a modified insulin administration by comparing the length and depth of coma and the blood sugar levels in patients treated both by single and divided insulin dose methods. If the divided dose schedule were more effective, it would be expected that the induced coma would be equal or greater in depth and duration; that the time for onset would be equal or shorter; and the blood sugar levels lower for divided dosage than single administration.

#### METHOD

Consecutive patients referred for insulin coma therapy were given daily increasing amounts of insulin in 3 divided doses until a coma level was achieved. The same total dosage was then given in one injection. Six patients were studied in this manner. Each patient was started on the following insulin dose schedule: first day—10 units; second day—10 units and 2 doses of 5 units each at intervals of one half hour; third day—3 doses of 10 units at half hour intervals; and fourth day—20 units followed by 2 doses of 10 units. On each successive day

the dose was increased in 10 unit increments. At the time when coma was produced, a single dose equivalent to the 3 doses was given on the succeeding day.

For each treatment, coma depth and the time of onset was determined. Coma was defined as the loss of consciousness (failure to respond meaningfully to verbal signals), associated with the appearance of the Babinski reflex, and the loss of the lid reflex. An adequate coma treatment was defined as the persistence of this depth of coma, or deeper (loss of pupillary or corneal reflexes) for at least one hour.

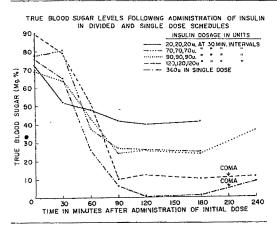
At half-hour intervals true blood sugar levels were serially determined by the Somogyi method. The resulting blood sugar curves and their level at the time of onset of coma, were compared for each subject with the blood sugar curve and coma data obtained on a single administration of an equivalent dose.

#### OBSERVATIONS

The blood sugar levels at various intervals after the administration of divided doses of insulin compared with a single dose of insulin in one patient is presented in Figure 1. This pattern has been reproduced in each of the patients studied. For each, the blood sugar curve drops rapidly in the first hour without respect to the initial dose, and flattens at progressively lower levels as the total dosage of insulin increases. Coma characteristically is reported in subjects in whom the blood sugar curve is below 21 mg.% for an extended period of time(1).

The time of onset of coma and the blood sugar level at coma in each of the patients is presented in Table 1. In five of the 6

<sup>&</sup>lt;sup>1</sup> From the Departments of Internal Medicine and Experimental Psychiatry, Hillside Hospital, Glen Oaks, L. I., N. Y.



cases, there was no difference in the time required to induce coma by either the single or the divided dose methods. In one subject (Sc) coma was observed in 1½ hours with a single dose as compared with 3 hours with divided doses.

TABLE 1

Onset of Coma and Blood Sugar with
Divided and Single Dosage Schedules

		Time for Coma		Blood Sugar Value	
-		(minutes)		(mg. %)	
PT	Insulin Units	Divided Dose	Single Dose	Divided Dose	Single Dose
D	330	210	190	4	0
G	360	210	210	14	4
$\mathbf{H}$	270	210	210	15	15
Sc	390	180	90	12	7
So	360	210	210	12	8
V	210	135	150	8	20

The average blood sugar at the time of coma was lower with the single doses than

with divided doses in 4 of the 6 cases. It was identical in one and lower with the divided dose in one.

As there was no evidence in these studies that the divided dose method was more effective in the production of insulin coma than the single dose method, the divided dose technic was discontinued.

#### Conclusions

The coma produced with the divided insulin doses did not occur earlier and was not deeper than that produced by the single dose. The increased effort in divided dose schedules is justified neither by increased safety nor by increased depth or duration of the induced hypoglycemia.

There was no evidence that the initial dose of insulin sensitized the subject so that subsequent doses produced a greater hypoglycemic effect. The total hypoglycemic effect of divided doses appears to be less, if anything, than the effect of a single dose.

#### **BIBLIOGRAPHY**

- 1. Blumberg, A. G., Cohen, L., Croghan, J., and Kelsey, D.: J. Hillside Hospital, 5: 41, 1956.
- 2. Fink, M.: J. Hillside Hospital, 6: 197, 1957.
- 3. Kalinowsky, L., and Hoch, P.: Shock Treatments, Psychosurgery and Other Treatments in Psychiatry. New York: Grune & Stratton, 1952.
- 4. Laqueur, H. P., and LaBurt, H. A.: Proc. Annual Meeting, American Psychiatric Association, Phila., 1959.

#### A RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRĀNIL, GEIGY)

IRENE S. FORREST, Ph.D.,1 AND FRED M. FORREST, M.D.2

Rapid, simple, semi-quantitative urine color tests as an objective means of evaluating actual drug levels were found of value in the management of hospitalized as well as ambulatory mental patients, and a number of such tests were previously re-

ported by us for various phenothiazine derived drugs(1-4).

A new psychopharmacological agent, imipramine (Tofrānil), 5-(3-dimethylamino-propyl)-10, 11-dihydro-5H-dibenz [b, f] azepine hydrochloride, has recently been introduced and is widely used in depressive states, particularly in endogenous depressions. In view of the fact that depressive pa-

<sup>&</sup>lt;sup>1</sup> Research Biochemist

<sup>&</sup>lt;sup>2</sup> Chief, Acute Service, VA Hospital, Brockton, Mass.

tients are frequently reluctant to ingest medication, it was especially desirable to have a simple urine test to determine instantly whether a patient is actually taking the prescribed drug dosage. Imipramine is not a phenothiazine drug, but its ring system containing two CH<sub>2</sub> groups in the place of the sulfur atom in phenothiazine compounds, is sufficiently similar in structure to expect certain similarities of physiological drug metabolism, e.g. formation of metabolites of an intermediary oxidation level. (All of our rapid color tests, for phenothiazine compounds as well as for imipramine, are based on the reactions of these intermediary urinary drug metabolites with metal salts in acid vehicles of pH 1 or less.)

A satisfactory reagent for the demonstration of urinary Tofrānil consists of a mixture of:

will be published shortly. In a representative number of urine specimens containing Tofranil alone or in combination with phenothiazine drugs, vitamins, energizers, etc. no false negative tests were encountered. In approximately 300 control urine specimens, either free of drugs or containing drugs other than Tofranil, no false positive tests, i.e., green color reactions, were seen In testing a urine specimen containing Tofranil plus a phenothiazine compound, the initial pinkish-purple to violet color reaction due to the phenothiazine compound, appears immediately and fades rapidly, and is then followed by the more stable development of green color due to Tofranil metabolites. Likewise, the presence of urinary Torranil does not interfere with the various tests for individual phenothiazine drugs(1-4), and the tests for Tofranil and the respective

25 parts 30 % (b 25 parts 50 % (b	tassium dichromate solution by volume) sulfuric acid by volume) nitric acid ommercial product) perchloric acic.
--------------------------------------	--

The above Tofrānil reagent reacts also with phenothiazine compounds, but in contrast to the phenothiazine reactions, in which the colors are pink, purple or violet, Tofrānil yields only green shades.

The test is performed by placing 1 cc. of urine in a test tube, adding 1 cc. of the reagent, mixing gently and observing the resulting color development. Daily Tofranil doses of 25 to 250 mg. (the latter being the highest dose seen) yield a scale of colors ranging from pale olive to deep emerald green. The lower doses of 50 mg. per day or less produce color reactions of lesser stability, persisting for 15 to 25 seconds, while the medium and higher doses yield increasingly stable color complexes persisting for more than 60 seconds in the highest doses. However, even the short lived reactions of the lower dosage levels may be properly interpreted with the help of a color chart which is currently in preparation and phenothiazine compound in patients on combination drug therapy may be carried out on two different 1 cc. samples of the same urine specimen.

The Tofranil reagent itself is a pale yellow solution. When mixed with control urines containing no drugs at all or pharmacological agents other than phenothiazine compounds, it shows colors from pale yellow to other or orange shades. Green reactions have been exclusively obtained in the presence of Tofranil.

#### **BIBLIOGRAFHY**

- I. Forrest, F. M., and Forrest, I. S.: Am. J. Psychiat., 113: 931, 1957.
- 2. Forrest, F. M., Forrest I. S., and Mason, A. S.: Am. J. Psychiat, 114: 931, 1958.
- 3. Forrest, F. M., Forrest, I. S., and Mason, A. S.: Am. J. Psychiat., 115: 1114, 1959.
- Forrest, F. M., Forrest, I. S., and Mason,
   A. S.: Am. J. Psychiat., 116: 549, 1359.

#### THREE YEARS OF TREATMENT OF CHRONIC HOSPITALIZED PSYCHOTIC INDIVIDUALS WITH PROMAZINE (SPARINE)

ANTHONY J. GRAFFEO, M.D.1

A study was made over a 3-year period of 180 chronic hospitalized psychotic patients, 95 men and 85 women, for whom promazine hydrochloride therapy (Sparine®-Wyeth) was prescribed. The patients ranged in age from 16 to 88 years and the duration of their mental illness varied from 1 to 62 years with an average of 15 years.

The patients were selected at random, the only requisited being an increase in psychokinetic activity, manifested by restlessness or agitation, complications from chlorpromazine the apy, or lack of improvement from the use of other methods of chemo-

therapy.

The patients came from two groups; those in whom complications developed as a result of chlorpromazine therapy (58) patients), and those who received promazine therapy during the initial evaluation studies (122 patients).

The dose of promazine administered varied from 50 mg. given at bedtime to 400 mg. q.i.d. The initial dose of promazine hydrochloride was administered according to the psychoginetic activity of the individual. If the symptoms of restlessness, agitation, or promeness to get into difficulties with other patients were mild, 100 mg. of promazine, two or three times daily, usually were prescribed. When the behavior of the patient was severe, 400 mg. of promazine, t.i.d., were prescribed. One patient in the group received 1600 mg. of promazine daily for a period of approximately 15 months. When patients accepted the tablets only to collect them or to eject them later, liquid promazine concentrate in equal doses in aromatic (glucose) solution was substituted for the tablets. When the liquid form of medication was refused, one-half the prescribed dose was given intramuscularly.

Statistically, 47 (26%) of the 180 patients showed marked improvement in behavior, and 82 (46%) showed moderate improvement. There was not any improvement in 51 (28%) of the patients; however their behavior did not become worse.

Improvement in their psychosis was also noted; marked improvement occurred in 23 patients (13%) and moderate improvement occurred in 54 patients (30%). In 98 (54%) patients there was not any psychotic improvement and, in 5 (3%), there was some indication of mild regressive trends.

Promazine adequately modified the formerly disturbed behavior pattern of the chronic schizophrenic patients so that psychotherapy was facilitated and, as a result, made it possible for 26 patients to be released from the hospital. Two patients returned from convalescent care because they did not take the promazine as directed.

The results of this study confirm the conclusions of other authors of the need for adequate medication, but within the prescribed limits of the medication and in the range up to 1200 mg. divided equally into three doses given daily.

Promazine has a very satisfactory range of safety, the effectiveness has been proved, and the complications or side effects are negligible.

Although chlorpromazine is a useful adjunct in psychotherapy, complications frequently develop from its use. The 58 patients in whom these complications developed on chlorpromazine therapy were safely treated and their disturbed behavior patterns sufficiently modified by the use of promazine therapy to enable them to return to their prepsychotic social environment. Of the 58 patients who were placed on promazine therapy because of the development of complications on chlorpromazine therapy, 49 (85%) showed resolution of their complications and have been continued on promazine medication. Fifteen of the 49 patients who improved are on convalescent care.

The hypothesis that increased potency of a phenothiazine associated with a high incidence of extrapyramidal symptoms is associated with a greater therapeutic effectiveness is not substantiated by this study comparing the effectiveness of chlorpromazine and promazine over a 3-year period.

<sup>1</sup> From Department of Psychiatry, Rochester State Hospital, Rochester, N. Y.

#### OBSERVATION ON TWO PSYCHOTOMIMETIC DRUGS OF PIPERIDINE DERIVATION—CI 395 (SERNYL) AND CI 400 <sup>1</sup>

LEONARD LEVY, M.D., D. EWEN CAMERON, M.D., AND R. CAIRNS B. AITKEN, M.B., CH.B.<sup>2</sup>

This report describes the sensory blocking action of two anaesthetic drugs CI 395 and CI 400. CI 395 is Sernyl:—1—(1-phenylcyclohexyl) piperidine monohydrochloride, and CI 400 which is N-ethyl—1 phenylcyclohexylamine monohydrochloride. The phenylcyclohexyl nucleus is common to both drugs.

#### PROCEDURE

Four schizophrenic and 14 patients with mixed psychoneurosis were given both drugs in dosage of 0.05 to 0.2 mg. per kg. of body weight. Intravenous injections produced the most striking effects within minutes; intramuscular injections were less marked but more prolonged; oral administration was least effective.

Sernyl produced tachycardia, sweating, excessive salivation, disturbances of consciousness, cerebellar signs, motor effects, loss of deep pain sensation and anaesthesia. These changes were mild or absent with CI 400, which caused disorder of thought with apathy but no body-image disturbance. Both drugs produced mild hypertension.

With Sernyl psychoneurotic patients showed apathy, then anxiety, followed by disturbance of body-image, feelings of unreality and depersonalization, together with thought disorder, disorganization of intellectual processes and difficulty of comprehension.

Two patients became hostile and paranoid and one experienced auditory hallucinations. Euphoria occurred in 6 patients after intravenous injection.

The body-image disturbance which occurred in all patients was well recalled after effects of Sernyl had disappeared. Feelings of "floating in outer space" were frequently described. A tendency for patients to maintain catatonic limb postures was present with Sernyl and absent with CI 400.

Chlorpromazine, 50 mg. intramuscula-ly seemed to antagonize the psychotomimetic effects of Sernyl and produced a return to normal body-image.

In the 4 schizophrenic patients, Serayl produced an increase in the schizophrenic symptoms with exaggeration of thought block, body-image disturbance and depersonalization. Two of these patients who received LSD 25 previously, described their reaction to Sernyl as different to LSD 25. CI 400 on the other hand, produced an alleviation of symptoms and mild clinical improvement.

#### COMMENTS AND SUMMARY

Based on the work of Elkes and Shore, Sernyl appears to exert its action by the release of adrenaline and noradrenaline in association with the depression of the availability of serotonin in the brain. This is consistent with Brocie's hypothesis (1) that serotonin and noradrenaline are an agonistic chemical mediators regulating the central autonomic system.

The importance of kinaesthetic input in preserving the intactness of the body-image is well recognized in studies of the effects of sensory deprivation(2). Nocturnal delusions of the senium due to loss of familiarity with surroundings is also a well recognized phenomenon(3). Hence, disturbance of kinaesthetic input, whether taking place primarily within the brain, due to externally administered agents :uch as CI 395, or outside the brain as in sersory deprivation, leads to psychotic behaviour with features similar to schizophrenia. "Information input underload" and the disturbance of coding or integration of sersory stimuli at a higher level may be the possible cause of psychotic behaviour.

The reversibility of the psychotomimetic effects produced by Sernyl with chlorpro-

<sup>&</sup>lt;sup>1</sup> The authors express their appreciation to Parke, Davis & Company, Ltd., Detroit, Mich., for their supply of drugs used in this study.

<sup>&</sup>lt;sup>2</sup> From the Allan Memorial Institute of Psychiatry of McGill University and the Royal Victoria Hospital, Montreal, Que.

mazine, suggests a common mechanism with that seen in temporary psychotic states, such as acute paranoid or schizophrenic reactions. This would support the tentative hypothesis of Luby and associates (4) "that certain primary symptoms of schizophrenia may have their basis in a dys-synchrony or defect in proprioceptive feedback."

#### BIBLIOGRAPHY

1. Brodie, B. B.: Neuropharmacology, 3rd Conf. Josiah Macy, Jr., Found., 75: 323, 1956.

2. Bexton, W. M., Heron, W., and Scott,

T. H.: Can. J. Psychol., 8: 70, 1954.

3. Cameron, D. E.: Psychiat. Quart., 1941.

4. Luby, E. D., Cohen, B. D., Rosenbaum, G., Gottlief, J. S., and Kelley, R.: A.M.A. Arch. Neuro. & Psychiat., 81: 363, 1959.

#### REPORT OF HYPOMANIC EXCITEMENT WITH IMIPRAMINE TREATMENT OF DEPRESSION

C. E. SCHORER, M.D.1

With the recent flood of anti-depressive drugs, many reports have appeared concerning their physical side-effects and toxicity. But the psychic side-effects need to be kept in mind because they can create serious problems requiring hospitalization or other immediate treatment. Psychomotor and psychological changes of a pathological sort, in fact, have been mentioned briefly in earlier articles on imipramine. Lehmann reports visual hallucinations or hypomanic excitement appearing in 7 of 84 patients reated with that drug(1). The commercial description of imipramine lists agitation as the commonest side-effect requiring discontinuance of therapy-25 times more common than any other psychic or physical reaction(2). Azima describes elation or hypomania in 10 patients out of 145 given the drug(3).

This paper deals specifically with the occurrence of hypomania during imipramine treatment. At this hospital, 88 patients have been given imipramine in the usual dosages. Among these, 6 instances of hypomanic excitement appeared, with such typical features as elated mood, grandiose schemes, pressure of speech, restlessness, and combativeness. In some instances this behavior stopped a few days after the drug was stopped; in other patients, it continued for more than 8 weeks after stopping imipramine. A patient report follows:

A 58-year-old white woman became gloomy, apathetic, unable to do household tasks, anorexic, sleepless, and suicidal beginning in

June, 1958. She lost 30 pounds and became more depressed in spite of treatment with a combination of amphetamine and amobarbital. No previous episodes of depression or hypomania were admitted. When first seen in the outpatient department, in June, 1959, she was given imipramine 25 mgm. q.i.d., and in two or three days rapidly changed. She visited and irritated others by her excessive enthusiasm and constant calls, and was admitted to hospital on July 2, 1959. Imipramine was discontinued and the ward physician gave her large doses of trifluoperazine for her overactivity. By July 7, she showed extrapyramidal signs, but was still over-talkative, distractible, and verbosely enthusiastic for the hospital and the staff. An EEG and routine laboratory tests were normal. Psychological test performance was impaired by her inability to sit still and finish; the tests showed euphoria, defects of attention, flight of ideas, and pressure of speech. On July 17, psychological tests still showed minimal organic changes and the defects of attention noted ten days earlier. Proclorperazine was substituted as the patient became calmer, but even when discharged on September 4, she still showed signs of hypomania, although no longer taking imipramine for two months.

This case illustrates several important problems in imipramine treatment. Is the hypomania a drug-induced reaction, or is it merely a variant, an equivalent of the depression? Is this altered behavior truly a side-effect of the drug, or, since it continued long after imipramine was stopped, merely another pathological expression of the same basic excess of anxiety, permitted or provoked by the effect of imipramine?

<sup>&</sup>lt;sup>1</sup> Lafayette Clinic, Detroit 7, Mich.

If the latter possibility is accepted, what is the neurophysiological or psychodynamic mechanism for the change (4, 5, 6, 7)?

Another question raised by this survey of our depressed patients is whether or not the change from depression to hypomania is unique for imipramine-treated patients. It also occurs in manic-depressive patients without medication, in psychotherapy, and with ECT, although the exact incidence is not known. It has occurred in 3 of our patients receiving new monoamine oxidase inhibitors. Besides, hypomanic excitement appeared in a depressed boy of 16 with schizophrenia (schizo-affective type) on imipramine administration, and was treated in a similar way to the above described patient. Imipramine-induced hypomania, therefore, appears not merely in the manicdepressive patient, but seems a possible reaction whenever a severe affective disorder occurs. Adequate treatment consists of discontinuing imipramine, administering phenothiazines, and, if necessary hospitalizing the patient.

In summary, hypomania may occur during imipramine treatment of depression, and may continue long after imipramine is discontinued.

#### BIBLIOGRAPHY

- 1. Lehmann, H. E., Cahn, C. H., and DeVerteuil, H. L.: Canad. Psych. Assoc. J., 3: 155, Oct. 1958.
- 2. Letter from Medical Department, Geigy Pharmaceuticals, Sept. 23, 1959.
- 3. Azima, H., and Visro, R. H.: A.M.A. Arch. Neurol. & Psychiat., 81: 658, May 1959.
- 4. Lewin, B. J.: Am. J. Psych., 116: 29, July 1959.
- 5. Schneck, J. M.: Arn. J. Psych., 115: 78, July 1958.
- 6. Faucett, R. L.: Am. J. Psych., 115: 245, Sept. 1958.
- 7. Fellner, C. H.: Am. J. Psych., 115: 547, Dec. 1958.

#### THROMBOCYTOPENIA IN PROLONGED CHLORPROMAZINE THERAPY

JOHN R. SHAWVER, M.D., AND STANLEY M. TARNOWSKI, M.S.<sup>1</sup>

A patient in our hospital developed thrombocytopenia in February, 1958, after receiving 200 mg. of chlorpromazine twice daily continuously since March 19, 1956. The psychiatric diagnosis was schizophrenic reaction, chronic undifferentiated type. The thrombocytopenia produced bleeding from the gastro-intestinal tract. This in turn produced anemia with a red blood count of 1,840,000; hemaglobin 7 gms.; white blood count 4,300; neurophils 61; lymphocytes 35; monocytes 4; hematocrit 22; platelet count 66,500. The next day the platelet count was 38,640. As soon as this condition was discovered the chlorpromazine was discontinued. A splenectomy was performed by our surgical consultant. Following the splenectomy the platelet count rose to 116,000 but in a few days dropped to 50,000 where it remained. The patient developed a lung abscess. Treatment for this condition was ineffective and the pa-

tient died. During treatment he received a total of 69 pints of whole blood.

Our experience in this case caused us to wonder if any relationship between the administration of chlorpromazine and the development of thrombocytopenia can be demonstrated. We have studied 245 patients who have been on chlorpromazine administration for 2 or more years, with a drug range from 100 mg. to 800 mg. per day. In addition to routine hematological procedures, platelet estimations were performed employing Breecher's (1) method which utilizes a phase microscope. In our group only one individual reflected a low platelet count of 77,000 per cmm. coincidental with a leukopenia of 2,150 per cmm. No abnormalities were noted in this case with regard to interference of bleeding and clotting mechanisms as demonstrated by normal bleeding and coagulation times, clotting retractions, prothrombin and prothrombin consumption times and fibrinogen. Upon drug removal and 6 months later, the

<sup>&</sup>lt;sup>1</sup> VA Hospital, Waco, Tex.

low platelet count and leukopenia were still present.

Forty-three patients of our original group revealed low normal platelet counts (175,000 per cmm. or less) and were reevaluated after an additional 6 months of chlorpromazine with essentially no changes encountered.

Ayd(2) reported no dramatic hematological changes, without platelet counts being performed, in a survey of 50 patients administered chlorpromazine for 2 to 4 years. LeBlanc(3) reported a marked drop in platelets following a single injection of chlorpromazine in animals.

#### SUMMARY

Two hundred and forty-five patients who had been on chlorpromazine medication for

two or more years were evaluated hematologically, including platelet estimations. Only one case was found with a relatively low platelet count coincidental with leukopenia in which no interference in bleeding or clotting mechanism could be demonstrated. From our study we conclude that the development of thrombocytopenia in patients who are on prolonged therapy with chlorpromazine is rare. We plan to evaluate the 245 patients in this study at yearly intervals.

#### **BIBLIOGRAPHY**

- 1. Breecher: Am. J. Clin. Pathology, 23: 15, Jan. 1953.
- 2. Ayd, F. J., Jr.: J.A.M.A., 169: 1296, March 21, 1959.
- 3. LeBlanc, J.: Proceed. Soc. for Exper. Biol. & Med., 97: 238, Jan. 1959.

#### CASE REPORTS

#### AGRANULOCYTOSIS FOLLOWING USE OF IMIPRAMINE HYDROCHLORIDE (TOFRANIL)

P. A. ROTHENBERG, M.D., AND CHARLES HALL, M.D.1

There have been no cases of agranulocytosis occurring as a complication of the use of imipramine hydrochloride (Tofrānil) reported in the literature. Since this drug is now widely used in the therapy of depression in both office and hospital practice, it is considered important to publish the occurrence of agranulocytosis following its use.

W. M., a 64-year-old white, married male was admitted to the Albany VA Hospital on 7/22/59 with the history of depressed feelings of a few months' duration. Pertinent medical history included probable minor cerebral vascular accidents in the past with no gross residuals. There was no history of any medication or exposure to toxic substances which would be considered likely to produce bone marrow depression. Psychiatric diagnosis was involutional psychotic reaction and electroconvulsive therapy was planned. The admission CBC was: WBC-6,450; 77% neutrophils, 20% lymphocytes, 1% monocytes, 2% eosinophils; hemoglobin-14.8 grams; hematocrit-48. The admission unrinalysis showed a 1-plus albuminuria, 30-40 RBC's per hpf. and 2-4 granular casts. The patient's physical status was evaluated by a medical consultant who found evidence of arteriosclerotic heart disease with mild decompensation, mild hypertension, and osteo-arthritis. He was redigitalized, having been on digitoxin previously.

Prior to shock therapy, he was placed on

Tofranil 25 mgm. t.i.d. p.o. for one week with an increase to 50 mgm. t.i.d. for the next 4 weeks. It was then discontinued because of negligible improvement in his mental status. A CBC one week after start of Tofranil was within normal limits. At the end of the fifth week of Tofrănil he was found to have a WBC of 2,650 with 8% neutrophils. Three days after the drug was discontinued a bone marrow aspiration showed severe hypoplasia particularly of the granulocytic series. Erythrocytic production was also depressed but not as severely. Megakaryocytes were normal in number. At that time there were no neutrophils in the peripheral blood. Lymphocytes predominated but no abnormal cells were seen. A few hours later he developed a fever of 100-103, and sore throat. He was treated with anti-biotics followed by corticosteriods. Simultaneously with the first dose of the latter and probably unrelated to it, 6% stab forms appeared in the differential. There was a rapid return to a normal WBC and differential over the next few days. A slight drop in hematocrit was also quickly restored. Following recovery the steroids were discontinued. A second bone marrow aspirate taken after recovery was normal.

During the course of hospitalization other drugs taken included two doses of sodium phenobarbital intramuscularly, grains 2, digitoxin 0.1-0.2 mgms. daily, mineral oil emulsion, Dulcolax and Fleet's phosphosoda. It is our opinion that agranulocytosis in this case was probably due to imipramine hydrochloride (Tofrānil).

<sup>&</sup>lt;sup>1</sup> Respectively, Staff Psychiatrist and Hematologist, VA Hospital, Albany, N. Y.

#### PRELIMINARY REPORTS

#### TREATMENT OF DEPRESSIVE STATES WITH MARPLAN

JANE E. OLTMAN, M.D., AND SAMUEL FRIEDMAN, M.D.<sup>1</sup>

The present report is an evaluation of Marplan in the treatment of depressive illnesses.

Marplan <sup>2</sup> is an amine oxidase inhibitor with the chemical formula: 1-benzyl-2-(5-methyl-3-isozazolylcarbonyl) hydrazine. Treatment was initiated with one tablet (10 mg.) t.i.d.; the dose was increased as necessary, usually within 7 to 10 days, to 5 or 6 tablets daily. Although favorable response was apparent in some instances within the first week, optimal results usually did not appear until the 3rd or 4th week of treatment. Following maximal response, maintenance therapy was continued, usually at a level of 2 to 3 tablets daily.

The case material consisted of 100 patients admitted to the Fairfield State Hospital during the past 8 months. There were 83 women and 17 men. They ranged in age from 28 to 82; 55% were in the 5th and 6th decades. The diagnostic grouping included: psychoneurotic reactive depression—33, psychotic depressive reaction—14, manic-depressive reaction—35 (depressed—27, circular—6, confused—2), involutional psychotic reaction—10, and arteriosclerotic or senile reaction with depression—8. In general, the illnesses were acute or subacute, and the degree of depression was relatively severe.

Results of treatment were regarded as eminently satisfactory. Of the entire group, 70% were considered to have achieved a remission (47%) or much improved status (23%). The factors which may have contributed to therapeutic success or failure were not clearly crystallized. Males and individuals over 70 seemed to react somewhat less favorably. Concomitant organic factors did not mitigate against satisfactory results. Multiplicity of attacks did not

<sup>1</sup> Clinical Director and Assistant Superintendent, respectively, Fairfield State Hospital, Newtown, Conn. <sup>2</sup> Generous supplies of Marplan (trademark) were furnished by Hoffmann-LaRoche, Inc.

appear to be a significant factor. Results in the circular manic-depressive group were comparatively poorer than in the series as a whole; however, the number in this group was small.

Indications for the use of Marplan run parallel to those for ECT with respect to depressive illnesses. However, the two modes of treatment should not be regarded in antagonistic terms. In some instances, ECT is preferable; in others, drug therapy may be the treatment of choice. For example, of the 70 patients in the successful drug group, 16 had been recently treated with ECT, without effect or with prompt relapse. These patients, previously refractory to ECT, responded well to Marplan. Ten of the 30 patients refractory to Marplan were then treated with ECT; 50% responded well.

Situations which especially favor the use of Marplan are: the presence of physical factors which make the administration of ECT either hazardous or untenable; the intervention of complications or physical illness after the initiation of ECT; refractoriness to, or relapse following ECT, or when maintenance ECT is required to preserve a satisfactory level; refusal of permission for ECT. Since optimal effect of drug therapy may not appear until the 3rd of 4th week of treatment, ECT is preferable whenever there is significant suicidal risk or when immediacy of response is otherwise desirable, as in the presence of severely depleted nutritional status.

With respect to the ultimate level of improvement and total duration of treatment, Marplan was found to compare favorably with ECT in many instances. It appears probable that the number of ECT treatments cannot be reduced by the concomitant administration of Marplan. However, there was frequently stabilization of the effect of ECT by the simultaneous or subsequent use of the drug. It is difficult

at present to estimate how long the drug must be administered. Our observations thus far would indicate that antidepressant drugs must be continued for some time after apparent remission of the attack.

As with ECT, the tendency to swing from the depressive phase to a mild hypomanic state was also noted with Marplan. Brief omission of the drug followed by reduction of the previous dosage usually alleviated the condition.

Complications or side effects were few and minor. They consisted chiefly of mild dizziness, headache or sensation of fulness in the head, and feelings of weakness or shakiness. These occurred more often in elderly patients; they could be ameliorated by reduction of dosage. There was no clinical evidence of hepatic damage, and liver function profiles were unchanged.

#### SUMMARY

Marplan is a safe, effective drug in the treatment of depressive states. Good to excellent results were obtained in 70% of a series of 100 hospitalized patients suffering from depressive illnesses. Complications or side effects are minor.

#### PRELIMINARY REPORT ON A NEW PSYCHOTROPIC COMPOUND (RO 4-0403/4)

#### WALTER KRUSE, M.D.1

The clinical evaluation of a new psychiatric drug is always a stimulating experience. The present study seemed particularly interesting since initial testing by a number of European investigators (1) had shown the drug to have antidepressive as well as tranquilizing properties. Ro 4-0403/42 is a (2-chloro-9-(3thioxanthene derivative dimethyl-aminopropylidene)-thioxanthene). Comparison of its structural formula with that of chlorpromazine reveals a rather minor difference between the two: the nitrogen in the second ring of the phenothiazine is substituted by carbon and the side chain is attached to it by double bond.

So far we have treated 30 female hospitalized psychiatric patients with this new drug for a period of 2 months or more. Twenty-three of these patients had been sick more than a year, 7 were more acutely ill. All patients were depressed. Ten belonged to the manic-depressive group, 8 were involutional depressions, 6 were schizophrenics with marked and persistent depressive features, and 6 were reactive depressions of the psychoneurotic category. Ages were between 26 and 64, average age was 49 years. Average duration of illness was 2.8 years. All of the chronic cases had had pre-

vious treatment (ECT, phenothiazines, imipramine, and MAO inhibitors) and had failed to respond. None of the acute cases had previous treatment. Ro 4-043/4 was given in tablet form. Starting dosage was 25 mg. t.i.d., highest dosage was 400 mg. daily. A few patients responded satisfactorily to a dosage of 100 mg. daily, most of them needed 150 mg. Further increases helped only in 2 cases and did not help in 6 cases. Already on the first or second day a certain sedative effect was ncticed and a very definite improvement of sleeping habits. A lifting of the depression occurred as early as 3 days after beginning of treatment, in most cases after the first week and before the fourth week. Ro 4-0403/4 was well tolerated. There was some initial drowsiness in 5 of the 30 patients. Blood pressure dropped an average of 15 mm. But in the case of a 51-year-old patient, the BP dropped to 56/40 on the second day, and treatment had to be discontinued. This patient had shown similar reactions to phenothiazines, imipramine, and MAO inhibitors. Eight patients complained of dryness of the mouth. No other unpleasant reactions occurred in this series of patients.

#### RESULTS

Eleven of the 30 patients showed excellent response and were able to leave the

<sup>&</sup>lt;sup>1</sup> Danvers State Hosp., Hathorne, Mass.

<sup>&</sup>lt;sup>2</sup> Ro 4-0403/4 was provided for this study by Roche Laboratories, Nutley, N. J.

hospital on extended visits. Ten patients showed some improvement, and 9 were essentially unimproved. As expected, the 7 acute cases (6 psychoneurotics and 1 manic-depressive) responded better than the chronic ones. While 6 of them showed excellent response the seventh, a psychoneurotic depression, improved only moderately. Only 5 (2 manic-depressives and 3 involutional depressions) of the 23 chronic cases could be classified as "excellent results," but it should be mentioned that none of these patients had responded to previous treatments, including MAO inhibitors and imipramine. Of the remaining 18 chronic patients, 9 showed some improvement: they slept better, had a better appetite, and were less agitated. They were also less depressed as evidenced by their behavior and facial expression, but subjectively there was little or no change of mood.

One case of a circular type of manicdepressive illness was of particular interest. Treatment had been started when patient was in a depressive phase. Within 10 days the depression lifted and the patient was on home visit. After a week she became hypomanic. Treatment with Ro 4-0403/4, however, was continued and in a few days its tranquilizing effect became very clear. The patient was thus able to remain home. A few weeks later the patient's mood had finally returned to a normal level.

Delusions and hallucinations in schizophrenic patients were little affected by this drug, but the hypochondriacal ideas found in depressive patients responded surprisingly well. Sleep was promptly improved, and this seems particularly important since neither imipramine nor the MAO inhibitors seem to be of much help in the insomnious cases.

In spite of the small number of patients in this study the results especially in the chronic cases indicate that Ro 4-0403/4 is a potent antidepressive agent. If further experience supports our preliminary findings it will certainly find its place in the treatment of depressed patients.

#### **BIBLIOGRAPHY**

1. Madsen, E., and Jorgen, Ravn: Nord. psychiatr. tidsskr., 13: 82, 1959.



#### COMMENTS

#### NEW MENTAL HEALTH ACT. ENGLAND AND WALES

Elsewhere in this issue will be found a discussion of the new Mental Health Act in England and Wales which Dr. Walter S. Maclay, Medical Senior Commissioner of the Board of Control, has been kind enough to prepare specially for the Journal at our request.

The new Act replaces in one piece of legislation many Acts of the past 70 years. It is the result of a vast amount of study

and administrative skill.

It gives expression to the entirely new way in which mental disabilities are being considered and dealt with by those best qualified to judge.

Dr. Maclay's presentation of the important features of the new Act should be of great interest to all interested in the care and treatment of mental patients and especially those bearing responsibility therein.

#### MENTAL HEALTH-BACK TO THE COMMUNITY!

Tens of millions of words have been written, and are yet to be composed on the subject of our national mental health situation, as we continue to struggle for management of a problem which sometimes seems to enlarge more rapidly than the solutions come to light. Yet at long last the time is right, and the message is in the wind; heretofore scattered and haphazard efforts to gain information, promote planning, and erect an organizational structure which will facilitate adequate prevention and treatment are merging into one deep, unidirectional channel. As individual citizens and as medical planning groups we have an increasingly clear idea where we are going. If a slogan has not been drawn from the tumult of detail, this is because we have felt no need for it. Yet as a descriptive summary of present trends, the simple words, "Back to the Community" have meaning and usefulness. The development of community orientation is more prepossessing than it may first seem, for it gains its importance from consistency with the currents of our national life. A concept is right and timely, adjustive and successful to just the extent that it is consistent with the wider dynamic milieu into which it is introduced. At the community level, the patient and the various financial and mechanical issues of mental health prevention and treatment are personalized; when this happens, action results.

Whatever multiple causes may be assigned by the sociologists, the fact stands clear that today the process of decentralization in American living has become a floodtide. The bright call of the mechanized mob has lost its urgency, and almost no one wants to be "Mr. Average" any more. This is clear not only in the stylized, neurotic individualism of today's young writers, and the peculiarities of society's "fringe groups," but also in mundane daily affairs. Surburban homes and the shopping centers which organize them into small communities, small cars which increase the driver's freedom of operation in the mobile environment, decentralization of industry and banking, increasing competition in the standard trade markets such as tobacco, and the emphasis on individualism which keynotes modern advertising are but a few examples. People seek out new and fantastic hobbies and sports, perhaps only to devote some corner of the week to "being themselves" in a unique way.

If the need for individuality is so blatantly expressed by the emotionally healthy, and if satisfaction is often so pitifully incomplete, how much more intense are the needs and frustrations of the mentally ill? These are the personalities who have become casualties of our over-mechanized culture—a culture with too many demands to meet, too many choices to make, too many rules to remember.



The gadgets of our existence may have improved in efficiency, but is it too trite to point out that man evolves a bit more slowly, that he struggles along with the same old physical machine, and what is more, the same old psychological machine? The tools of happiness today are expressly what they were hundreds and perhaps thousands of years ago. They include a firm sense of one's identity as separate from the environment, and yet an established and productive role in that environment. They include secure, lasting relationships with family, friends, employer, and the corner grocerrelationships which are not vulnerable to the tide of fortune, or someone's "bad mood."

It is in this context, then, that reorganization of the national mental health program should be undertaken.

1. Provide the patient with a treatment setting in which he can retain his individuality (or regain it), where he can belong as part of the group (or learn how to), and we will have provided him with the tools of recovery. Small hospitals well-spaced geographically, should replace the massive, mechanized structures of yester-year, which still house the lost lines of nameless faces.

2. The aim of good psychiatric treatment is, and always has been, the realignment of the dynamics of the personality, in such a way as to capitalize on the patient's strengths, and reduce the influence of his frailties. Then let us capitalize on his strengths! Let us use his relationships with family and friends, his job, his social interests, his myriad ties with his own community. Let us offer help in or near the community, in smaller mental hospitals, in psychiatric units within general hospitals, in outpatient mental hygiene clinics, in the offices of psychiatrically-oriented general practitioners. Let us build vocational rehabilitation programs around "day-and-night" hospital plans, and employers who can offer "stress-graded" work. Let us return the patient from his illness by means of a steady ladder of increased community participation, with "halfway houses," family counselling, follow-up psychotherapeutic guidance.

3. The mechanism of substituting re-

versibility for the irreversibility which formerly led so many patients into deeper mental illness and eventual custodial care is a simple one. Open the lines of communication and facilitate a free flow of patients between the community and the hospital. Remove legal restrictions and change commitment procedures, so that the trail to a public mental hospital does not become a slippery, one-way street. The choice of treatment level type and setting should be flexible and available to all patients for a precisely optimal period. Then, and only then, will we fulfill our responsibility for guarding the mental as well as the physical health of everyone in the community.

The responsibility for this type of community-centered mental health program falls squarely on those shoulders most competent to carry it-those of the busy family and general physician. He knows, or should know, his community, its resources, its people, and its problems. The conduct of both prevention and treatment of mental illness falls within the proper realm of his judgment and control. A doctor dedicated to the promotion of "whole-person-health" will note the beginning of emotional difficulties, and through work with his patient and knowledge of the environmental milieu, can frequently take the necessary "stitch in time." When the problems require specialized help, he can make the necessary referrals, if through his own efforts in community organization and leadership, he has provided himself with the necessary contacts and resources. Psychiatric and other medical specialists, various kinds and levels of psychiatric facilities, social and civic agencies all stand ready to play appropriate roles on the periphery of the mental health circle; the family physician is the core of the circle, and his the executive role.

Such a burden of responsibility may seem cruel at first glance, whereas properly managed it can lighten the general physician's work, particularly those aspects which are immeasurably frustrating and discouraging. For the recurrent neurotic, hypochondriacal, psychosomatic, or otherwise emotionally ill patient there can be help which is remedial, rather than merely temporary or palliative. In an age of specialization when too many doctors are

forced into the role of technicians, the broader, community approach to medicine much more nearly approaches the original motivations of a physician. Devotion to productivity, interest in growth and development, almost childlike curiosity about the rhythms and needs of life, ease in identifying with other human beings are some of the priceless qualities that make a doctor—and also a community leader. Fifty years ago, the "town doctor" was automatically healer and civic leader; the needs and trends of American life today seem to demand that he return (although in a more complex sense) to this timehonored role.

The thesis of "Back to the Community" is merely that, failing adequate manpower and facilities to deal with our national mental health crisis through habitual meth-

ods, we can make use of the resources available, within our communities and within ourselves. More hospitals, more money, and more psychiatrists we most clearly need. While we acquire these, the most adaptive approach lies not in deepening the old, socially neurotic channels of adjustment, but in realigning our medical defenses in a way that better fits the needs of our patients. Early treatment, preservation of the patient's resources, reassertion of our own human abilities as doctors-in short, decentralization of the mental health program combined with old-fashioned medical "horse sense"—will not only function as means of interim control, but will reduce the total quantity of hospitals, money, and psychiatric specialists we must ultimately acquire.

F. G. E.

#### ETHICS BORN OF EXPERIENCE

As man advanced in intellectual power, and was enabled to trace the more remote consequences of his actions, as he acquired sufficient knowledge to reject baneful customs and superstitions; as he regarded more and more, not only the welfare, but the happiness of his fellowmen; as from habit, following beneficial experience, his sympathies become more tender and widely diffused, extending to men of all races, and finally to the lower animals, so would the standard of his morality rise higher and higher.

Looking to future generations, there is no cause to fear that the social instincts will grow weaker, and we may expect that virtuous habits will grow stronger. The struggle between our higher and lower impulses will be less severe, and virtue will be triumphant.

-Charles Darwin



#### CORRESPONDENCE

#### CORRESPONDENCE

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

'Sra: All of us who are members and fellows of the American Psychiatric Association are properly concerned with the Scientific quality of the American Journal of Psychiatry. Accordingly, I thought it might be of value to call your attention to an unfortunate implication of the comment by Dr. Werner Tuteur in the September, 1959, issue, entitled "Statistics and Statisticians: A Timely Warning." Dr. Tuteur makes a point that undue inferences should not be drawn from statistical data. One might think of stronger illustrations than the three he uses to make this point, but I'm sure he would find agreement with his main thesis on the part of both statisticians and non-statisticians.

It seems to me that it is at this latter point mainly, that statisticians would agree with him, that Dr. Tuteur makes his most unfortunate inference. It is one thing to make a point that statistics may be misused, but another to attribute these, for the most part, to statisticians. (For example, Dr. Tuteur says that it is well to remember "some examples of basic fallacies inherent in statistics and statisticians." (Nothing which he says further in his article indicates that the misuse of statistics was done by statisticians.)

It has been my experience that Dr. Tuteur errs in two respects. First of all, I

have found statisticians to be among the most cautious people in the interpretation of statistical inferences. I am sure they also draw some unwarranted inferences, but they are less apt to do this than the person who is not a statistician.

Secondly, I believe that Dr. Tuteur is too narrow in his approach to what comprises the field of the statistician. He writes as if the statistician were one who dealt merely with the manipulation of figures, and then principally in ex-post facto approach. Actually, the statistician is very much concerned with research, design, problems of sampling, uncontrolled variables, accuracy of the data corrected, etc. We physicians often make a considerable error in not consulting a statistician until the experiment has been concluded. This overlooks the value, and sometimes the main value, of the statistician in setting up research design.

For these reasons, I think it is important to call your attention to the fact that in implicating the unwarranted conclusions which may be drawn from a misuse of statistics, Dr. Tuteur has unfortunately, and inaccurately, "warned" us about statisticians, as well.

Myron G. Sandifer, Jr., M.D.,
Director of Research,
North Carolina Hospitals Board
of Control,
Raleigh, N. C.

#### REPLY TO THE FOREGOING

Editor, THE AMERICAN JOURNAL OF PSYCHIATRY:

Six: In choosing the title "Statistics and Statisticians," I was merely guided by the linguistic concept that the two words represent two halves of a unit similar to "Alcohol and Alcoholics," or "Farms and Farmers," etc. The alliterative effect of the two words also played a part. At no time did I intend to write a polemic treatise against the profession of statisticians. The over-all motivation for writing the paper was its

closing quotation, which says that "it is doubt that gets you an education." A better title might have been: "Some Pitfalls and Fallacies inherent in Statistics." As Dr. Sanifer points out, apart from the unfortunate phrase "inherent in statistics and statisticians," nothing I have said indicates the misuse of statistics by (professional) statisticians. My concept was that a person using statistics, linguistically, is a statistician.

Werner Tuteur, M.D., Elgin, Ill.



#### NEWS AND NOTES

Funds for Research in Psychiatry Available.—The Foundations' Fund for Research in Psychiatry announces the availability of funds for the establishment of 4 or 5 permanent, full-time research positions (associate or full professor level) for research psychiatrists in departments of psychiatry in medical schools. The closing date for applications is July 1, 1960. For further information, write to the Foundations' Fund for Research in Psychiatry, 251 Edwards St., New Haven 11, Conn.

MENTAL HEALTH RESEARCH INSTITUTE, UNIVERSITY OF MICHIGAN.—The dedication ceremonies of the Mental Health Research Institute Building of the University of Michigan, Ann Arbor, were held on January 29, 1960.

The all-day program included an open house in the new building, luncheon addresses by Dr. William N. Hubbard, Jr., Dean of the Medical School and Dr. Ralph W. Gerard, Director of Laboratories, Mental Health Research Institute. At the afternoon session of scientific papers, Dr. Jacob Marschak, Yale University, Dr. Anatol Rapoport and Dr. James G. Miller of the University of Michigan spoke.

LYNCHBURG (VA.) TRAINING SCHOOL AND HOSPITAL, LECTURE SERIES.—Between February and October 1960 a series of lectures, demonstrations, conferences in the fields of psychiatry, neurology, mental deficiency, nursing, psychology and social work will be held at the Lynchburg institution, in which eminent speakers from various centers will participate.

Dates of the meetings and other particulars may be obtained from Mrs. Constance P. Rudd, Director Public Relations, Lyachburg Training School and Hospital, Colony, Va.

THE WORLD MEDICAL ASSOCIATION 14TH GENERAL ASSEMBLY.—The German Medical Association, host of the 14th General Assembly of The W. M. A., scheduled to con-

vene in West Berlin, September 15-22, 1930, extends a cordial invitation to all the doctors of the world to attend this outstanding meeting.

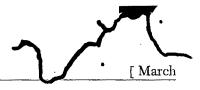
The Bundesärztekammer (German Medical Association) will convene its 1960 annual meeting concurrently with the convening of the General Assembly. The two associations will meet jointly in their opening and closing plenary sessions.

Additional information including programs and schedules will be available on or about March 1 at The World Medical Association, 10 Columbus Circle, New York 19, N. Y.

INTERNATIONAL UNION OF FAMILY OEGAN-IZATIONS.—The Union will hold an international conference on the family in conjunction with the annual meeting of the National Council on Family Relations at Teachers College, Columbia University, New York City, August 23-26, 1960. Eleven member organizations of the IUFO in the United States will sponsor the conference. The theme will be Personal Maturity and Family Security. There will be plenary sessions and section meetings, including speakers from various parts of the world, and involving translations into the major languages. The sectional meetings, followed by discussion groups, will be on Early Child Development; Family Life Education in the Schools, in the Colleges, in the Community; Parent Education; Religion; Counseling; Research; and Economic Aspects of Family Security.

For information concerning registration, write: Mrs. V. W. Jewson, 1219 University Ave., S. E., Minneapolis 14, Minn.

PHILADELPHIA DRUG EXCHANGE ANNUAL DINNER MEETING.—Dr. Robert Felix, director of the National Institute of Mental Health and president-elect of the American Psychiatric Association, was the principal speaker at the annual dinner of the Philadelphia Drug Exchange on January 27. Dr. Felix's topic: "The dynamic role played by drugs in combating mental illness."



The dinner was held at the Bellevue Stratford Hotel, and honored Francis Boyer, board chairman of Smith, Kline & French Laboratories. Mr. Boyer received the Exchange's highest award, the Proctor Medal, for his "leadership in the fields of mental health, medical education and pharmaceutical research."

DR. EDWARD WEISS.—The death of Dr. Weiss, Professor of Clinical Medicine in Temple University Medical School, Philadelphia occurred January 13, 1960. He had suffered a heart attack. His age was 64.

Dr. Weiss had long specialized in psychosomatic medicine and had been president of the American Psychosomatic Society of which he was one of the founders. His book *Psychomatic Medicine*, co-authored with O. Spurgeon English, also of Temple University, is widely known. It has gone through several editions and been translated in other languages.

Dr. Weiss, a native of Philadelphia, graduated from the University of Pennsylvania and Jefferson Medical College. He had served on the staffs of both the Philadelphia General Hospital and Jefferson Hospital, and came to Temple University as clinical professor in 1932. He was also director of psychosomatic research in the National Association for Mental Health.

WORLD MENTAL HEALTH YEAR.—Lewis B. Cullman, National Chairman of the World

Federation for Mental Health, United States Committee, Inc., reports that Dr. Frank Fremont-Smith, Co-chairman for the International Committee of World Mental Health Year left for Moscow January 26 at the invitation of Professor P. K. Anokhin, Director of the Institute of Physiology in Moscow, and will endeavor to further the participation of the U.S.S.R. in World Mental Health Year by becoming a member in this world effort for better mental health and human relations.

From Moscow, Dr. Fremont-Smith will go to London for the meeting of the Executive Board of the World Federation for Mental Health of which he is past president.

NORTH PACIFIC SOCIETY OF NEUROLOGY AND PSYCHIATRY.—Dr. Thomas H. Holmes, Secretary-Treasurer, announces that the North Pacific Society in conjunction with the Northwest District Branch of the American Psychiatric Association will hold its annual scientific meeting at the Benjamin Franklin Hotel, in Seattle, Wash., on April 8 and 9, 1960.

Guest speakers will be Dr. Douglas D. Bond, Professor and Chairman of the Department of Psychiatry at Western Reserve School of Medicine, Cleveland, Ohio, and Dr. Horace McGoon, Professor and Head of the Department of Anatomy at the University of California, Los Angeles.

#### SCIENTIFIC OBSERVATION

Put off your imagination as you take off your overcoat when you enter the laboratory; but put it or again, as you do the overcoat, when you leave the laboratory. Before the experiment and between whiles let your imagination wrap you around; put it right away from yourself during the experiment itself, lest it hinder your observing power.

-CLAUDE BERNARD



#### OFFICIAL REPORTS

#### EXPLANATORY NOTE

#### WALTER H. OBENAUF, M.D.

Comments have reached me to the effect that the article, "The District Branch of the APA: Its Origin, Present Status, and Future Development," published in the November, 1959, Journal, was incomplete, with respect to certain historical aspects, and subject to misinterpretation concerning my beliefs about the future relationship between the Assembly and the Council.

As pointed out in the article, it was the explosive increase of the membership which was (and continues to be) the moving force which led to the establishment of the Assembly of District Branches, and to the growth of the District Branches. The work of the Reorganization Committee, although its proposals were not adopted by the membership, was nevertheless one of the stimuli (in my judgment), from which our Assembly has developed. As the Assembly gains experience and status, I believe that it will become even more important in the development of policy for the Association. Through the District Branch, each and every Association member may participate in the business of the Association. Thus the Assembly, as more and more members become involved in District Branch affairs, will come more and more to reflect the wishes and opinions of the membership at large. This, I had been led to believe, was the intent of the plan offered by the Reorganization Committee, and that is what I had in mind when I wrote: "there seems to be no doubt that in time the original plan of the Reorganization Committee headed by Dr. Karl Menninger will, to all intents and purposes, be fulfilled."

Every organization requires an executive body, and I can see no advantage in, or likelihood of, the surrender of this function by our Council as now constituted. The relationship between the Assembly and its officers and the members of Council has been most cordial to date, and there is every reason to believe that this relationship will continue. As a matter of fact, the District Branches, through the Assembly, have, in the recent past, provided valuable experience for some members of Council and officers of the Association. The importance of this function cannot, in my judgment, be overemphasized, and I believe that it is likely to continue and to increase—to the great advantage of the Association. Thus, relationships between the Assembly and the Council should tend to cement ever more firmly as time goes on.

Credit for the historical development of the Assembly belongs to many, but one or two individuals deserve special mention. Past President D. Ewen Cameron, was one whose vision and parliamentary skill resulted in the adoption of the amendment to the By-Laws, which established the Assembly in 1952, and it was during his Presidency that the first Assembly was convened at Los Angeles in 1953. Indeed, when the deliberations of the first day of that year resulted only in the election of the first officers, and little other meaningful action (because of doubts concerning authority), it was his urging that caused the Assembly to meet again on the second day and take a definite stand on important current issues. Another officer who deserves special mention is Mr. Austin Davies, who, in his role as Business Executive for the Association for the past 28 years, has worked with the Association officers and others through all that time in the development of our organizational structure. He has believed in, and, along with others, actively promoted the idea of the District Branch. However, as he himself states, there was little response to such efforts until Doctor Cameron fathered the amendment to the By-Laws that led to the creation of the Assembly.

As I stated in the original article, it has been my hope that it might act to stimulate thought and discussion concerning the



future course of our Association. Even though evidence to date suggests that this occurs largely because of omissions, rather than because of the substance of the article, I continue to hope that my efforts may not have been entirely in vain.

#### **FREEDOM**

Liberty lies in the hearts of men and women; when it dies there, no constitution, no law, no court can save it; no constitution, no law, no court can even do much to help it. While it lies there it needs no constitution, no law, no court to save it. And what is this liberty which must lie in the hearts of men and women? It is not the ruthless, the unbridled will; it is not freedom to do as one likes. That is the denial of liberty, and leads straight to its overthrow. A society in which men recognize no check upon their freedom soon becomes a society where freedom is the possession of only a savage few; as we have learned to our sorrow.

#### -LEARNED HAND

("The Spirit of Liberty" address in "I am an American Day" ceremony in Central Park, New York City, May 21, 1944).



#### BOOK REVIEWS

BRIZOPHRENIA: A REVIEW OF THE SYN-BROME. Edited by Leopold Bellak, M.D., and Paul K. Benedict, M.D. (New York: Logos Press, 1958. \$14.75.)

This book reviews the literature on schizophrenia—approximately 4,000 references—of the period 1946-1956 and is intended as a companion piece to Bellak's Dementia Praecox which covered the years 1936-1946. The editors were assisted in this enormous task by a group of distinguished colleagues contributing chapters in the areas of their special interest and competence, and the principal editor himself contributed 3 chapters. He states in his foreword that the book is not intended to be particularly critical but rather to place the available data before the reader leaving selective judgement to the latter.

The book has many merits. First, it should be of great value as a type of index and source of individual references. The coverage in most areas is very comprehensive. A further value is the provision of perspective in breadth and through time of the myriad aspects of cause, manifestations and treatment of schizophrenia which have been observed and reported upon by thousands of investigators. Such a perspective, besides bringing a welcome measure of order and coherency to a field of scientific literature which sometimes verges on the chaotic, also should be a useful antidote to the all-too-frequent dramatic claims of discovery of single causes and cures of schizophrenia.

The overview obtained from reading this survey is in some ways disheartening. Repeatedly one gains the impression of investigators seemingly working in relative isolation, with little true communication with each other or building upon and integrating with the work of others. This is not just between the somatic and the psychological camps but also within each of these and other groups. In short, the picture is of an extremely disarticulated scientific community. Several of the authors comment upon the impossibility of comparing reports from investigators who operate in different conceptual frames of reference and with a nosology which permits an obfuscating heterogeneity of patients diagnosed as schizophrenic. It appears that schizophrenia as a concept suffers from many features of schizophrenic thought disorder such as overinclusion, overconcreteness, faulty abstraction,

and interpenetration. The lack of clarity in our conceptual framework and nosology, as well as absence of uniform and reliable tools for measurement of degrees of illness and improvement, appear as major stumbling blocks in the path of serious scientific investigation.

This leads to my major criticism of the book, namely the setting of a goal of a noncritical review. Although it would have added to the immensity of their task, by essaying a thoroughly critical work the authors also could have added greatly to the already considerable value of their book. In fact, the chapters in which the authors permit themselves critical comparisons and efforts to focus and synthesize are among the best. These include the chapters by Bellak and Blaustein, Psychoanalytic Aspects of Schizophrenia; Freeman, Physiological Studies; Benedict, Socio-Cultural Factors, and portions of the chapter by Ekstein and collaborators on childhood schizophrenia. I believe that most readers would have welcomed further such assistance in wir.noving the wheat from the chaff of this enormously bulky literature.

For the most part, the book is well organized. There are a few areas of repetition and overlap which might have been eliminated. For example, the chapters on Vital Statistics and Socio-Cultural Factors overlap in their discussions of incidence rates. Sections of 4 other separate chapters—Etiology, Pathogenesis and Pathology; Diagnosis and Symptomatology; Complications and Sequelae; and Prognosis, also overlap and might usefully have been combined in part of whole.

One area which seemed slightly neglected and possibly deserving of a separate chapter was that of personal relationships, social interaction patterns and problems such as withdrawal and desocialization in schizophrenia. These received only brief mention in the chapter on psychological studies and a section on milieu therapy in the general psychotherapy and allied methods chapter.

The virtues of this book as a good reference source, in providing a useful overview of the tangled complexities of the subject, and in illuminating specific handicaps and weaknesses in our over-all investigatory effort make it a valuable work indeed.

DONALD A. BURNHAM, M.D., Chestnut Lodge Research Inst., Rockville, Md.



HAVELOCK ELLIS, ARTIST OF LIFE. By John Stewart Collis. (New York: William Sloane Associates, 1959, pp. 221. \$4.00.)

The author of this book was a personal friend of Havelock Ellis. At the latter's request he had written the Introduction to his Selected Essays for the Everyman Library. It is well therefore that he has here set down his own impressions of one of the world's great thinkers and men of letters. His book is not a biography in the ordinary sense; he is content to have "brought out what is relevant and significant during the most creative years" of the life of Havelock Ellis. For continuity of the life story he depends heavily upon Ellis' autobiography, My Life, from which he freely quotes. But the interest is less in the outward events and more in the natural history of a mind.

Mr. Collis' book appropriately commemorates the centenary of H. E.'s birth in 1859.

The author has a good deal to say about My Life. He does not consider it a work of art or find all parts equally inspired. But "after page 30 I do not feel like skipping a word for some 200 pages." Later, "To a certain extent only, the work becomes bogged down by his wife." H. E. wanted to paint "a full portrait of himself and her, letters and all . . . to fully portray two human beings coming together, and to show how all . . . are much the same in essentials when facing death or danger or other levellers." My Life is probably as factual and uninhibited a record as it is possible for a scientist who sets out to tell the truth, the whole truth, and nothing but the truth, to compose. By mutual agreement H. E. and his wife lived apart much of the time, keeping two establishments. H. E. condoned his wife's passion for other women, and later in reminiscence would refer to "her dear friend of this period." By his tolerance he retained his wife's loyalty and affection and did not cease to return these sentiments.

The wide range of Havelock Ellis' studies is shown in the list of his works published between 1890 and 1951. Some titles: The Criminal, The Nationalization of Health, A Study of British Genius, The Soul of Spain, The World of Dreams, The Problem of Race Degeneration, The Dance of Life, From Rousseau to Proust, The Genius of Europe, From Marlowe to Shaw, Sex and Marriage.

He is of course best known by the seven volumes: Studies in the Psychology of Sex. Mr. Collis gives short summaries of the contents of these volumes.

Unfortunately the first of this series ready for publication was the volume Sexual Inversion, which was printed in England. A dealer was sued for selling "a certain lewd wicked bawdy scandalous and obscene libel." The book was not defended and the case was lost. The judge added his testimony. He addressed the book seller: "You might . . . perhaps have been gulled into the belief that some one might say that this is a scientific book. But it is impossible for anyone with a head on his shoulders to open the book without seeing that it is a pretence and a sham . . . this filthy publication." Thus spake the Law-which seems to justify the opinion of Mr. Bumble as recorded by Mr. Dickens. But Havelock Ellis could later comment: "My 'filthy' and 'worthless' and 'morbid' book has been translated into all the great living languages."

The other volumes in this series were published outside of England. The story of the lives of Havelock and Edith Ellis indicates some of the measures by which the marriage of two quite incompatible personalities can be made tolerable for a considerable period, although at the wife's instance they were

ultimately legally separated.

H. E. had 23 years more of life-his happiest years Mr. Collis thinks, through association with the excellent Françoise Delisle who cooperated with the author in the preparation of his book.

C.B.F.

MAN AND CULTURE. Edited by Raymond Firth. (New York: Humanities Press, Inc., 1957, pp. 292. \$5.00.)

Bronislaw Malinowski (1884-1942) made such fundamental contributions to anthropological theory that they will go on stimulating students for generations to come. His works are among the most readable in a field that is characterized by brilliant writers, so that they will always remain a delight to read and a rich source of ideas to develop. The present volume is subtitled "An Evaluation of the Work of Bronislaw Malinowski," and it is the joint product of 12 of Malinowski's former students, each of whom has attained distinction in his own field of anthropology, and in one case in sociology. It may at once be said that this is by far the best volume that has thus far appeared on Malinowski, or is likely to appear, and it is highly recommended to all readers. The contributors and contributions are as follows: Raymond Firth: "Malinowski as Scientist and as Man"; Audrey I. Richards, "The Concept of Culture in Malinowski's Work"; Ralph Piddington, "Malinowski's Theory of Needs"; Talcott Parsons, "Malinowski and the Theory of Social Systems"; Phyllis Kaberry,

861

BOOK REVIEWS

1960 ]

"Malinowski's Contribution to Field-Work Methods and the Writing of Ethnography"; J. R. Firth, "Ethnographic Analysis and Language with Reference to Malinowski's Views"; E. R. Leach, "The Epistemological Background to Malinowski's Empiricism"; I. Schapera, "Malinowski's Theories of Law"; Meyer Fortes, "Malinowski and the Study of Kinship"; S. F. Nadel, "Malinowski on Magic and Religion"; Raymond Firth, "The Place of Malinowski in the History of Economic Anthropology"; Lucy Mair, "Malinowski and the Study of Social Change"; H. Ian Hogbin, "Anthropology as Public Service and Malinowski's Contribution to It." There is a complete bibliography of Malinowski's writings, a bibliography of works about Malinowski and his writings, and other works cited in the text. The profits from this volume will appropriately go to the support of an annual lectureship in memory of Malinowski, which is administered by Professor Raymond Firth at the London School of Economics where Malinowski taught from 1913 to 1941.

Ashley Montagu, Ph.D., Princeton, N. J.

Young Man Luther: A Study in Psychoanalysis and History. By Erik H. Erikson. (New York: W. W. Norton & Co. \$4.50.)

At first blush analytical studies of the dead may not seem quite "cricket." The deceased—whether Moses, or Luther, or King Oedipus himself are in a difficult position to defend themselves. However, as long as there has been literary criticism, there has been analysis of a sort. The addition of modern clinical tools should merely add scope and incisiveness to an important area in the study of man.

Dr. Erik H. Erikson is the eminent psychoanalyst and Freudian scholar who gave the Yale Centennial address on Freud. It is the author's contention that both Luther and Freud had many similar problems: the same intellectual loneliness, the same breakthrough from neuroticism to creativity, the same central problem of a father complex. "The Luder (Luther) family . . . offered an extreme degree of moralistic paternalism and a minimum degree of that compensatory free-for-all of small and highly satisfying delinquencies which farmyard, street, or park can provide for lucky children . . . an ideal breeding ground for the most pervasive form of the Oedipus Complex ... "Since this book is a psychoanalytic study, other aspects of Luther are touched upon. Thus we have Luther with a highly probably primal scene, Luther with the familiar syndrome of suspiciousness, obsessive scrupulosity, moral sadism and a preoccupation with dirt and dirty thoughts (Luther's father was a coal miner). Furthermore we are presented with Luther the manic-depressive who in his later years had profound bouts of depression. However, the outstanding symptom is an ever increasing rebelliousness—first against his father, then against the Church. The author makes the sage observation that Lutheranism became a man's religion; "wherever Luther's influence was felt, the Mother of God was dethroned."

The author of this book is a saltation man, a sudden emergence man. The words "life crisis" or "second birth" are frequently found and refer to a more or less sudden reorganization of the personality under stress. This is in contrast to the older, static concept of personality as a depository of earlier selves. As the author puts it, "Man is not organized like an archeological mound, in layers."

Probably most of the criticism of this book will come from the historians most of whom will reject his Great Man theory of history. For there are two schools of thought; Carlisle's Great Hero theory according to which history is viewed as a series of shadows cast by Great Men, and the sociological school wherein the great man functions something like a percussion cap touching off social forces which have long been gathering tension. The author obviously belongs to the discredited Great Man school, "... the young monk (Luther) interests me particularly as a young man in the process of becoming a great one," p. 36. There are many other instances. Critics have asserted that the Roman Catholic Church is the "spook of the Roman Empire" preserving its language, its dress, and something of its military organization. According to this theory the present Pontiff would be in a continuous line from Caesar Augustus. Most historians would regard Luther as the detonating device which set off explosive forces long gathering, rending Europe asunder with a Protestant north and a Catholic south, the cleavage lines for some odd reason following closely the boundaries of the ancient Empire.

Early psychoanalysis has been accused of "explaining away" the various types of religious experience as regressive phenomena. Dr. Erikson's approach is more sophisticated and brings in existential concepts. With Kierkegaard, he emphasizes the pitfalls of existence, especially as a venture in human freedom. He speaks of metaphysical anxiety, of "ego chils." Analogous to a sound barrier, the young the clogian is portrayed as advancing by a series of

breakthroughs to new levels of existence. At the same time this work is liberally sprinkled with fascinating glimpses of Luther; Luther the theologian, the man of courage, the peasant firmly rooted in the soil.

The author has a thoughtful, learned and seminal mind and the reader will soon discover that this book is packed with much thought proposing and novel speculation.

HIRAM K. JOHNSON, M.D., Orangeburg, N.Y.

STUTTERING—A Symposium. Edited by Jon Eisenson. (New York: Harper & Bros., pp. 402. \$6.00.)

Only too often one still hears in the medical profession that stuttered speech is but the symptom of an underlying neurosis and that removal of the neurosis will somehow automatically remove the speech difficulty. This somewhat naive notion has unquestionably been to the detriment of the advancement of both theory and practice with regard to this complex syndrome called stuttering. To the psychiatrist who is seriously interested in this problem area and wishes to broaden his outlook from that of the orthodox psychoanalytic view, this volume is highly recommended.

The introduction by Wendell Johnson carries a message in itself making a "semantogenic" approach to the problem. Johnson says "the reader may venture into the pages ahead with an assurance of finding, in varying proportions, both stimulation and contentment." This is certainly true. There are 6 contributors who each present a somewhat different facet of the problem, but by no means mutually exclusive points of view. Indeed what Sheehan, one of the contributors says, is applicable to almost the whole volume; "A blend of several approaches—of psychoanalytic and learning theories with modern personality theories."

Glauber's contribution presents little that is not orthodox, with much psychoanalytic theory and little in the way of conclusion. With this exception, however, the remaining contributors agree, to a large extent, if not in theory then certainly in practice. In a truncated review it would be difficult to spell out each contributor's point of view. The volume presents very well an attempt at integration and provides the clinician with many practical suggestions for

attacking the problem realistically. Bloodstein, Sheehan and Eisenson all present systematic theories and practical therapeutic procedures with a consistent rationale. Indeed it is interesting to note that, although we may differ somewhat in theory of etiology, we differ but little in clinical practice. West's refreshing, if not sobering, contribution "An Agnostic Speculates about Stuttering" is provocative in putting forward his "ictocongenital" hypothesis. Most experienced clinicians have had reason to speculate about the possibility of the convulsive nature of the disturbance in at least some types of stutterers. Van Riper's section "Experiments in Stuttering Therapy" is in rather vivid contrast to the other perhaps more "dignified" sections. Van Riper is having fun but this should not detract the reader from much valuable data that is contained in this section. It is material straight from the clinic files giving an account of experimental therapeutic procedures over a period of 10 years. It rings true. It portrays the man as well as the therapy, and is a lesson in clinical flexibility and objectivity.

Altogether the publication is a most worthy one and is certainly to be recommended to psychiatric practitioners. Nearly every section contains a comprehensive bibliography and it is encouraging to note, in these days when so many volumes are appearing under editorship, that a share of the royalties from the sale of this book has been assigned to an organisational cause.

E. Douglass, University of Toronto.

REPORTS, VOLUME 3, GROUP FOR THE ADVANCEMENT OF PSYCHIATRY. (New York: Publications Office, 104 E 25th Street, 1959, pp. 618. \$8.00.)

This volume contains 12 reports published from June, 1956 to May, 1959 and including discussions of the psychopath in mental health, mental health education, susceptibility to forceful indoctrination, methods of forceful indoctrination, epileptics at work, school desegregation, diagnosis in child psychiatry, leisure-time activities, group teaching for medical students, religion and psychiatry, adaptation to new situations, controls in psychiatric research.

A.G.

#### IN MEMORIAM

#### ALBERT WARREN STEARNS 1885-1959

Dr. Stearns, son of George Edwin and Helen Maria (Proctor) Stearns, was born in Billerica, Mass. on January 26, 1885. He attended Tufts College and graduated from Tufts Medical School in 1910. He showed keen interest in the specialties of medicine which needed physicians the most-psychiatry and neurology. He became one of the pioneers, especially in the field of psychiatry. His formal training in psychiatry began when he became a resident physician at Danvers State Hospital in 1911. At the end of the year he resigned to go to Boston State Hospital where he worked with Dr. Southard until the end of 1913 when he went into the practice of neurology and psychiatry.

Dr. Stearns' marriage to Frances Matsell Judkins on December 28, 1912 was blessed with two sons in the ensuing years. The untimely death of one of his sons, Albert Warren, Jr., on the threshold of a promising career in medicine, brought personal sorrow and grief, but not defeat. It heightened his understanding and responsiveness to human suffering and needs and increased his personal application of his potentials to greater capacity to alleviate illness and disease. His other son, Charles Edward, who is married and has four children, is the dean of Tufts College of Liberal Arts.

Dr. Stearns was consultant to U. S. Naval Hospital, Chelsea, Mass. from 1923 to 1929. He became professor of psychiatry and the dean of Tufts College Medical School from 1927 to 1945. During the years 1929 to 1933 he was the Commissioner of the Department of Correction of Massachusetts. He was associate commissioner of the Department of Mental Diseases of Massachusetts from 1935 to 1938. Dr. Stearns was chief of neurology service at the Boston Dispensary from 1921 to 1945. In 1943 Dr. Stearns was honored by Tufts College with an honorary degree of Doctor of Science. In 1945 he became professor of

sociology and remained as the chairman of this department until 1955.

Dr. Stearns served in the Medical Corps of the U. S. Navy in both World Wars. In the first one he served as a first lieutenant from 1917 to 1919. In the second war he served as a captain.

Dr. Stearns was a member and officer of many local, state and national medical and psychiatric organizations. He was a Life Fellow of the American Psychiatric Association, and member of A.M.A. In 1931 he was president of Boston Psychiatric Society. In 1934 he was president of Boston Society of Psychiatry and Neurology. From 1938 to 1940 he was Vice-President of Massachusetts Medical Society. He was a member of the American Academy of Arts and Sciences.

Dr. Stearns was the author of the book Personality of Criminals, published in 1932 and many other publications, such as Sexual Crime; The Life and Crimes of Jesse Harding Pomeroy; Cases of Probable Suicide in Young Persons; One Thousand Unsuccessful Careers (jointly with A. D. Ullman).

Dr. Southard described Dr. Steams as his cavalry officer who rode ahead and flushed out the enemy, described the configuration of the forces and rode on to the next undertaking.

His professional life was marked by a steady progression of successes, honors, recognitions in his chosen endeavors. Perhaps, none was more treasured than the annual dinner given him by his students. It has been said: The great use of life is to spend it for something that outlasts it—through his students his influence will live for generations. He called himself an "antiquarian" and evidenced a keen interest in the old houses and their early inhabitants and in the history and traditions of his native New England.

Dr. Stearns had a great many interests and hobbies. As horticulturist, he enjoyed his garden, flowers and shrubs. He talked about his apiary and displayed keen knowledge of various species of birds and wild life. His deep interest in his Alma Mater—Tufts College and Medical School, was foremost. He enjoyed the annual "home coming." One of his latest pictures was taken during class reunion with General and Mrs. Raymond W. Bliss on the campus of his Alma Mater in June 1959.

He appreciated certain values such as punctuality, thoroughness, truth, tolerance, attentiveness, decisiveness, discussions and freedom of verbal expression, especially by himself. He saw and expressed the better views on given topics. One exception was his minimal interest in the Freudian theory of the practice of psychiatry. He felt that it was oversold and that some psychiatrists with limited experience and training in it were practicing it.

He received many invitations from church groups, women's clubs, civic and professional organizations to give talks or to discuss psychiatric problems. He was called by the newspapers, courts, and judges to give an opinion on various psychiatric matters. These included delinquencies, mental status of murderers, changes in psychiatric therapies and laws, and handling of criminals. He was a dynamic and interesting speaker.

Up to the time of his sudden and unexpected demise, Dr. Stearns was an active psychiatrist. He was a psychiatric consultant at the Bridgewater State Hospital for the Criminally Insane and at Boston State Hospital. He was adept in forensic psychiatry and courtroom procedure and a familiar figure in many noted cases. He was scheduled to testify in court on the day of his death, September 24, 1959. The "Sage of Billerica" passed on gently, mercifully and peacefully as he had lived.

My association with Dr. Stearns continued for nearly three decades—initially as one of his students.

His warmth and sincerity endeared him to his associates, and his professional knowledge, competence, and wide experience, commanded the respect and confidence of all who knew him. The passing of Dr. Stearns is a great loss to Massachusetts, to New England, and to the nation.

Peter B. Hagopian, M.D.



ALBERT WARREN STEARNS

### THORAZINE®

one capsule in the morning provides daylong control of symptoms

- · Greater economy in hospital treatment programs
- · Greater control over office patients between interviews
- · Greater dosage convenience for both hospital personnel and working patients Available in 30 mg., 75 mg., 150 mg., 200 mg. and 300 mg. capsules.



KLINE& leaders in psychopharmaceutical research

New agent for parkinsonism



## Akineton®

brand of biperiden



#### PARKINSON'S DISEASE

postencephalitic — idiopathic — arteriosclerotic

#### DRUG-INDUCED EXTRAPYRAMIDAL DISORDERS

parkinsonism — dyskinesia — akathisia

#### MUSCULAR SPASTICITY NOT RELATED TO PARKINSONISM

ACTION

Frequently diminshes akinesia, rigidity, and tremor with subsequent improvement in coordinated movement, gait, and posture. Masklike face disappears. Salivation and oily skin are decreased. Oculogyric crises are often lessened in intensity and frequency.

SIDE EFFECTS

Minimum (mainly dry mouth or blurred vision).

DOSAGE

Individual adjustment of dosage is necessary in all instances. Dose range extends from 2 mg. to 24 mg. daily, in divided doses.

AVAILABLE

Supplied as the hydrochloride salt, 2 mg. bisected tablets, bottles of 100 and 1000.

Complete information furnished upon request.

KNOLL PHARMACEUTICAL COMPANY

ORANGE NEW JEDSEV

(formerly Bilhuber-Knoll Corp.)



# NEW THERAPY...TO DEFEAT THE MIGRAINE PARADOX\* 'MIGRAL'®

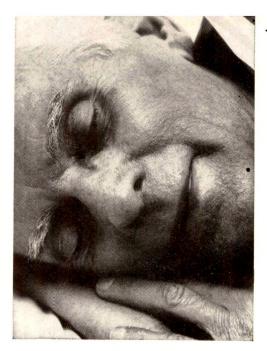
- relieves headache
- dispels visual disturbances
- and · overcomes nausea and vomiting

\*The paradox of migraine – increased nausea due to ergotamine administration – may now be successfully combated with 'Migral'. The recognized benefits of ergotamine and caffeine in 'Migral' are favorably enhanced by the addition of cyclizine hydrochloride, a specific to overcome nausea.

**Dosage:** 2 to 3 tablets at first warning of an attack, then 1 or 2 tablets every half hour; not more than 6 tablets should be taken for any single attack.

Supplied: 'Migral' tablets, containing ergotamine tartrate 1 mg., 'Marezine'® brand Cyclizine Hydrochloride 25 mg., and caffeine 50 mg.





# in the disturbed patient... UNTROUBLED SLEEP

NOLUDAR induces quiet sleep, even in patients with organic psychosis who have severe sleep resistance. Nighttime distortions and fears usually disappear; pre-sleep disorientation and agitation are reduced. NoLUDAR does not modify the EEG of the waking patient nor significantly alter the tracings of physiologic sleep. Further, NoLUDAR does not depress abnormal brain-wave activity. To provide sound, restful sleep without sacrificing safety, without prolonging awakening time, without altering the natural sleep pattern, specify NOLUDAR, the non-barbiturate hypnotic.

## NOLUDAR<sup>3</sup>00

NON-BARBITURATE HYPNOTIC

When a gentler hypnotic effect is desired, NOLUDAR 200 (200-mg tablets). For daytime sedation, NOLUDAR 50 (50-mg tablets).



ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley 10, New Jersey

## Compazine brand of prochlorperazine

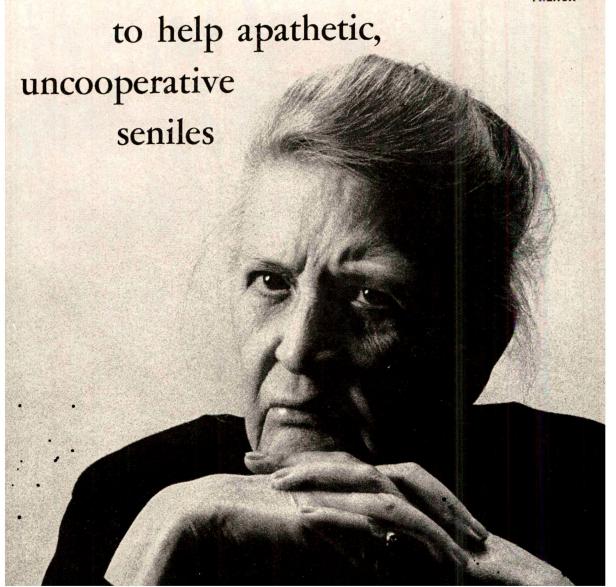
can penetrate the mental and physical apathy of senile patients so that they become more alert and cooperative. With 'Compazine', these patients are usually less inclined to incessant complaining. As they begin to socialize and to take an interest in their personal appearance and environment, the problems of management are greatly eased.

'Compazine' can also resolve the delusions and hallucinations of senile psychotics. 'And because 'Compazine' has little, if any, hypotensive effect, it can be used even in those patients who have cardiovascular disorders.

N.B.: If the senile psychotic is hyperactive, agitated, or belligerent, needing a sedative effect, Thorazine® (brand of chlorpromazine) may be preferable.

leaders in psychopharmaceutical research KUNE&

SMITH KUNE & FRENCH



## Basic aid

When more than your personal assurance is required to relieve the emotional distress common to every illness,

EQUANIL may confidently be prescribed to relax mind and muscle.

EQUANIL is the most widely used ataractic agent; its efficacy and extreme safety in the control of tension, anxiety and muscle spasm are thoroughly documented in hundreds of published papers.

The action of EQUANIL is specific.

Side-effects are rare.

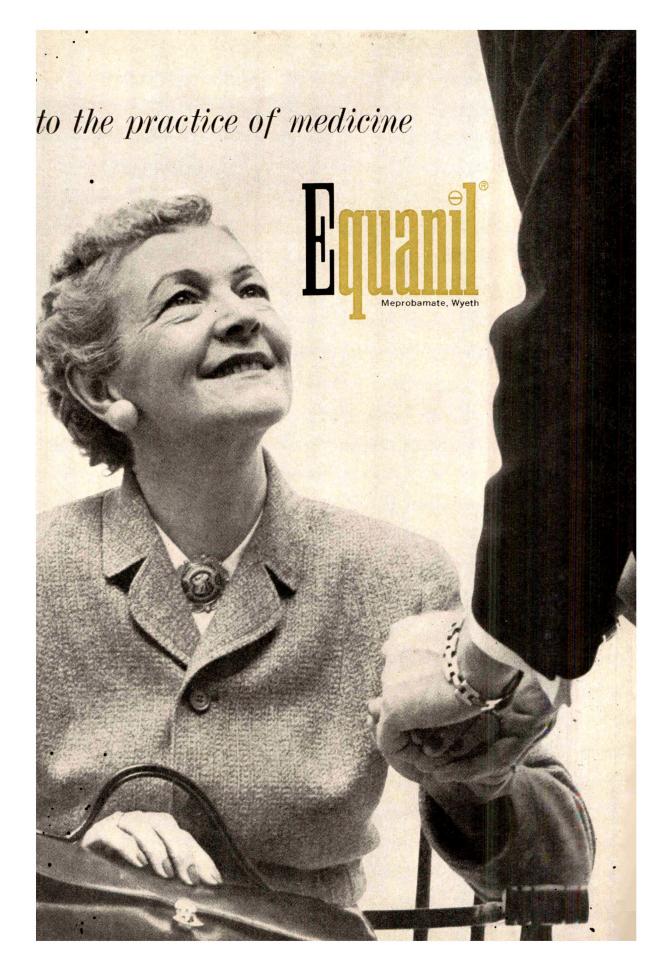
Because it is rapidly metabolized, effects are not cumulative.

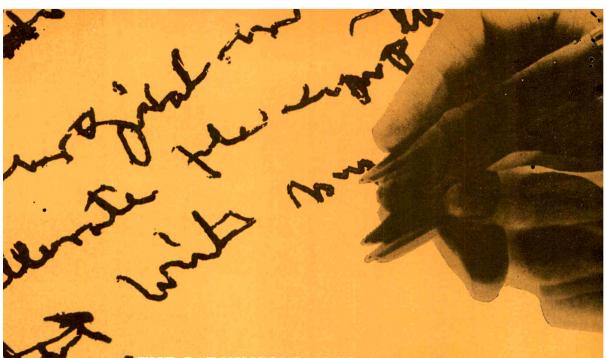
Because it does not cloud consciousness,
your patients remain alert and cooperative.



A Century of Service to Medicine

Your request will bring you a descriptive brochure with extensive bibliography. Wyeth Laboratories Philadelphia 1, Pa.





#### THE PARKINSONIAN SCRIPT...

... rigidity, tremors, and contractures — all respond to the long, cumulative action of Cogentin (a bedtime dose often controls symptoms for 24 hours¹). Cogentin also exerts "a highly selective action against... fixed facies, dysphonia, dysphagia, faulty posture, muscle cramps, and 'freezing' of the legs." Parkinsonism due to tranquilizer therapy "is easily alleviated by Cogentin," even after other drugs fail.4

Dosage: Dosage must be individualized. In arteriosclerotic, idiopathic, or postencephalitic parkinsonism, the usual dosage is 1 to 2 mg. daily, with a range of 0.5 to 6 mg. daily. In parkinsonism induced by phenothiazines or rauwolfia compounds, the recommended dosage is 1 to 4 mg. once or twice a day.

Additional information on Cogentin is available to physicians on request.

Now available: Injection Cogentin, 1 mg. per cc., ampuls of 2 cc. Also available: Tablets Cogentin (quarterscored), 2 mg., bottles of 100 and 1000.

References: 1. A.M.A. Council on Drugs: New and Nonofficial Drugs 1959, Philadelphia, J. B. Lippincott Company, 1959, p. 252. 2. Doshay, L. J.: J.A.M.A. 162:1031, 1956. 3. Ayd, F. J.: Clin. Med. 6:387, 1959. 4. May, R. H.: Am. J. Psychiat. 116:360, 1959.

COGENTIN is a trademark of Merck & Co., Inc.

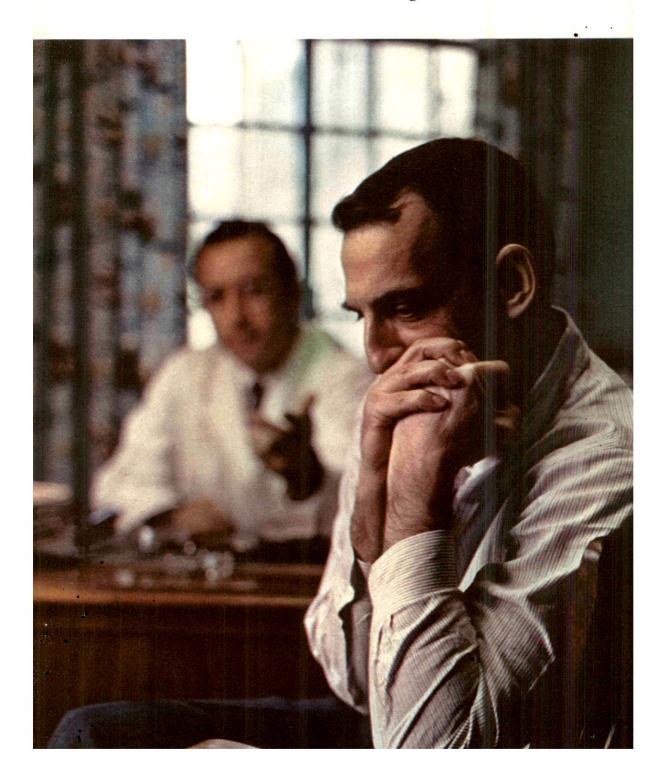


MERCK SHARP & DOHME Division of Merck & Co., Inc., Philadelphia 1, Pa.

## COCENTIN



# Trilafon helps avoid apathy of sedation controls tension while maintaining a clear sensorium



# Trilafon helps the psychotic function more effectively—shortens hospitalization

Responsive psychotic patients on TRILAFON exhibit "...dramatic gaining of insight and appropriate judgement...clarity of thought and a clear understanding..."<sup>2</sup>

Available as Tablets, Injection, Liquid Concentrate. Consult Schering literature for indications, dosage and administration, precautions and contraindications.

References: (1) Ayd, F. J., Jr.: New England J. Med. 261:172, 1959. (2) Morgan, D. R., and van Leent, J. P.: M. J. Australia 45:696, 1958.

S-416

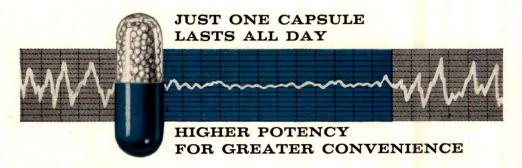


#### NEW AND EXCLUSIVE

## FOR SUSTAINED TRANQUILIZATION

MILTOWN (meprobamate) now available in 400 mg. continuous release capsules as

## Meprospan-400



- relieves both mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast,

one capsule with evening meal

Available: Meprospan-400, each blue capsule contains 400 mg. Miltown (meprobamate)

Meprospan-200, each yellow capsule contains

200 mg. Miltown (meprobamate)

Both potencies in bottles of 30.

WALLACE LABORATORIES, New Brunswick, N. J.

CMF-8427



## faster therapeutic response with REITER MODEL SOS

the one instrument combining the strongest convulsive currents with powerful yet gentle sedative currents

- exceptionally fast clinical therapeutic response
- most efficient convulsive currents result in minimal side effects—apnea, thrust, confusion and treatment-generated anxiety are negligible
- patients are quickly clear and bright following treatment
- difficult cases have responded to SedAc deep sleep therapy—powerful, deep, effective yet safe treatments are easily applied
- SedAc current establishes better transference patients become communicative
- anxious aversion to EST minimized by gentle SedAc current
- one-knob, with safety lock, controls convulsive and sedative currents
- clinical studies have evaluated a new measurement procedure to determine areas of cerebral damage and the degree of malfunction

Model SOS contains the Reiter unidirectional currents and three SedAc ranges as part of the single selector control. Other models available are:

1. Model S containing only the unidirectional currents; 2. SedAc (attachment) to be used with Model S; 3. SedAc (self-powered) an independent instrument.

Only Reiter, the original unidirectional current electrostimulators, are authentically backed by extensive clinical experience with over 200 references in literature and text-books.

Literature and bibliography on request.

REUBEN REITER, Sc.D.

64 WEST 48th STREET, NEW YORK 36, N. Y.

## THREE NEW BOOKS FOR PSYCHIATRISTS

1

DREAMS AND PERSONALITY DYNAMICS edited by Manfred F. DeMartino, Board of Cooperative Educational Services, Onondaga County, New York. This unique volume, which represents a new milestone in the field of dynamic psychology, encompasses a wide variety of aspects of the exciting and immensely important subject of nocturnal dreams. Nineteen well-known investigators deal with such topics as the history of dream interpretation and theory, sex differences in dream content, nocturnal sex dreams, children's dreams, typical anxiety dreams, personality correlates of dreams, methods of dream analysis, use of hypnosis, dreams and projective techniques, and physiological correlates of dreams. Particularly interesting is the final chapter presenting the recent and much publicized ingenious experimental studies (by Dement, Kleitman, and Wolpert) which demonstrate conclusively that there is a relationship between rapid eye movements during sleep and the presence of dream activity. Pub. Dec. '59, 396 pp., \$10.50

2

PRACTICAL NEUROLOGICAL DIAGNOSIS: With Special Reference to the Problems of Neurosurgery by R. Glen Spurling, University of Louisville School of Medicine, Louisville, Kentucky. Students of neurology at every level will find here useful, practical information which would take hours of library work to uncover. It is one of the very few books in English to bring together all the correlated anatomical and physiological data with a comprehensive neurological outline. The SIXTH EDITION, completely revised and reset from new type, is essentially the same book which brought praise like this: "Here is a splendid volume presenting simple and direct methods for comprehensive examination of the nervous system."—Journal of Nervous and Mental Diseases. "The book is of very practical value to the student and practitioner, which is the author's main purpose."—American Journal of Psychiatry. Pub. Mar. '60, 304 pp., 70 il., \$6.75

3

GENERAL PSYCHOTHERAPY: An Outline and Study Guide by John G. Watkins, V. A. Hospital, Portland, Oregon. From the INTRODUCTION by Doctor Lewis R. Wolberg: "...Dr. Watkins' present volume is one of the most significant contributions to appear. With prodigious effort and consummate skill he has achieved an almost impossible task, the gathering, classification and analysis of the most important writings of our time that relate in any way to psychotherapy." The outline form of presentation renders the book particularly valuable to the professor of psychiatry in the preparation of lectures on various theories and techniques. Residents in psychiatry will find it invaluable in preparing for board examinations. For the therapist it offers in "nutshell" form the basic ideas of different systems of psychotherapy. Pub. Jan. '60, 286 pp., \$9.25



Send for our new 1960 catalog of over 1100 titles

CHARLES C THOMAS • PUBLISHER
301-327 East Lawrence Avenue • SPRINGFIELD • ILLINOIS

## You Save More than Money with U.S. Savings Bonds

You can save automatically with the Payroll Savings Plan.

You now get  $3\frac{3}{4}\%$  interest at maturity.

You invest without risk under U.S. Government guarantee.

Your money will never be lost or destroyed.

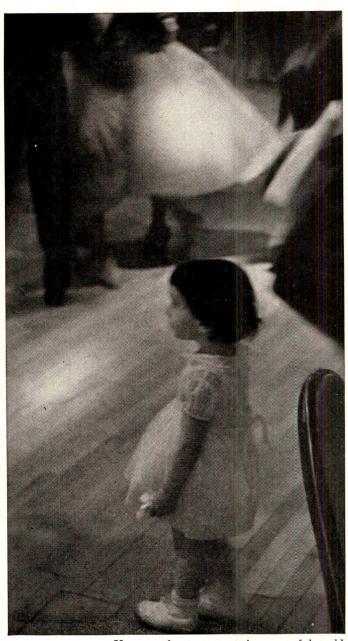
You can get your money, with interest, any time you want it.

You can buy Bonds where you work or bank.

And remember, you save more than money.

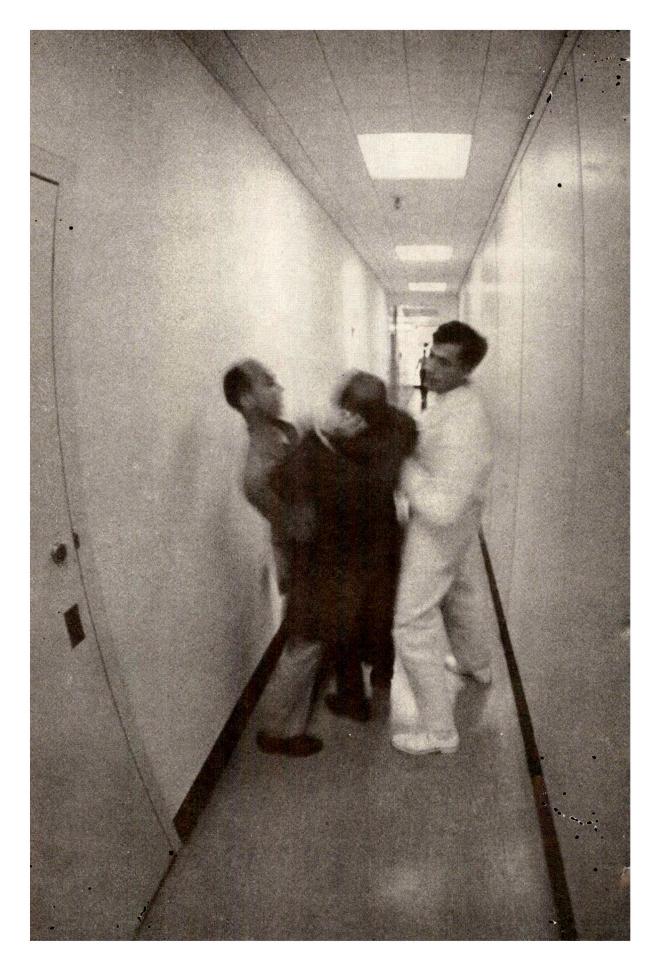


The U. S. Government does not pay for this advertising. The Treasury Department thanks The Advertising Council and this magazine for their patriotic donation.



You want her to grow up in a peaceful world.

Bonds are one way to help make sure.





on the admissions service

the rapid antipsychotic effect of

Stelazine<sup>®</sup>

brand of trifluoperazine

is especially valuable

Because of its rapid antipsychotic effect, 'Stelazine' can help shorten the hospital stay of new admissions.

#### To calm hyperactive patients

'Stelazine' exerts little or no sedative effect; rather, 'Stelazine' calms hyperactive patients chiefly because of its rapid effect against the psychotic process. Kovitz¹ comments that "One of the striking features of ['Stelazine'] is its dual capacity . . . to calm aggressive patients and . . . to stir passive, sluggish patients . . ."

#### To eliminate delusions and hallucinations

A striking response to 'Stelazine' is the rapid reduction or elimination of delusions and hallucinations. Feldman² writes that 'Stelazine' "is a highly potent psychopharmacologic agent, particularly effective for the control of delusions and hallucinations."

#### To activate withdrawn patients

'Stelazine' can activate to communicativeness the new admission who is withdrawn and mute, so that he is able to respond and to cooperate from the start in his treatment program.

- 1. Kovitz, B.: Management of Psychotic Tension Symptoms with Trifluoperazine: A Preliminary Report, in *Trifluoperazine: Clinical and Pharmaeological Aspects*, Philadelphia, Lea & Febiger, 1958, pp. 144-149.
- 2. Feldman, P.E.: An Evaluation of Trifluoperazine in Chronic Schizophrenia, ibid., pp. 87-97.





in observance of the 1960 World Mental Health Year The Macmillan Company proudly announces publication of

## culture and mental health

a world-wide compendium of cross-cultural studies in social psychiatry edited by **MARVIN K. OPLER**, Ph.D.

.....The Social Limits of Eccentricity: An English Study

William CaudillObservations on the Cultural Context of Japanese Psychiatry		
Bingham DaiObsessive-Compulsive Disorders in Chinese Culture		
George De Vos & Horace MinerOasis and Casbah—A Study in Acculturative Stress		
Jacob FriedAcculturation and Mental Health Among Indian Migrants in Peru		
Thomas Gladwin & Seymour B. SarasonCulture and Individual Personality Integration on Truk		
A. Irving HallowellPsychic Stresses and Culture Patterns; and Fear and Anxiety as Cultural and Individual Variables in a Primitive Society		
E. Gartly JacoMental Health of the Spanish-American in Texas		
Abram KardinerExplorations in Negro Personality		
Edward A. KennardMajor Patterns of the Mental Hospital—U.S.A.		
Tsung-yi LinTwo Types of Delinquent Youth in Chinese Society		
J. B. LoudonPsychogenic Disorder and Social Conflict among the Zulu		
Margaret MeadMental Health in World Perspective		
Simon D. MessingGroup Therapy and Social Status in the Zar Cult of Ethiopia		
H. B. M. MurphyCulture and Mental Disorder in Singapore		
Marvin K. OplerDream Analysis in Ute Indian Therapy; and Cultural Differences in Mental Disorders: an Italian and Irish Contrast in the Schizophrenias—U.S.A.		
Morris E. OplerFamily, Anxiety, and Religion in a Community of North India		
Victor D. SanuaDifferences in Personality Adjustment among Different Generations of American Jews and Non-Jews		
Melford E. SpiroCultural Heritage, Personal Tensions, and Mental Illness in a South Sea Culture		
Anthony F. C. WallaceThe Institutionalization of Cathartic and Control Strategies in Iroquois Religious Psychotherapy		
Eric D. Wittkower & Jacob FriedSome Problems of Transcultural Psychiatry		
EXCELLENT READING for anyone interested in the effect of culture on personality		
I myrm art gray y tay govern type a man to be a second type of		
THE MACMILLAN COMPANY, 60 Fifth Avenue, New York 11, N. Y.  Box AJP-3.		
Please send me a copy of OPLER: CULTURE AND MENTAL HEALTH on approval.  I may return it within 10 days without obligation. Otherwise bill me for \$8.75 plus delivery charges. (If you enclose payment, we pay for delivery.)   Payment Enclosed  Bill Me		
NAME		
STREET		
CITY, ZONE & STATE		



In the treatment of depression Tofrānil has established the remarkable record of producing remission or improvement in approximately 80 per cent of cases.<sup>1-7</sup>

Tofrānil is well tolerated in usage—is adaptable to either office or hospital practice—is administrable by either oral or intramuscular routes.

Tofrānil...a potent thymoleptic...not a MAO inhibitor. Does act effectively in *all* types of depression regardless of severity or chronicity.

Does not inhibit monoamine oxidase in brain or liver; produce CNS stimulation; or potentiate other drugs such as barbiturates and alcohol.

Detailed Literature Available on Request.

Tofrānil® (brand of imipramine HCl), tablets of 25 mg., bottles of 100. Ampuls for intramuscular administration only, each containing 25 mg. in 2 cc. of solution, cartons of 10 and 50.

References: 1. Ayd. F. J., Jr.: Bull. School Med., Univ. Maryland 44:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. 81:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. 3:155, 1958. 4. Mann, A. M., and MacPherson, A. S.: Canad. Psychiat. A. J. 4:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M.A.J. 80:540, 1959. 6. Straker, M.: Canad. M.A.J. 80:546, 1959. 7. Strauss, H.: New York J. Med. 59:2906, 1959.

Geigy, Ardsley, New York



lights the road to recovery in 80 per cent of cases





## Here comes help

Birth of a new Wyeth medicinal is presided over chiefly by the scientists who originated it, the pharmacologists who attest to its actions and safety, and the clinicians who determine its efficacy.

Others play vital roles. Others like Charles Stanley Suttle, one of a number of Wyeth Clinical Associates.

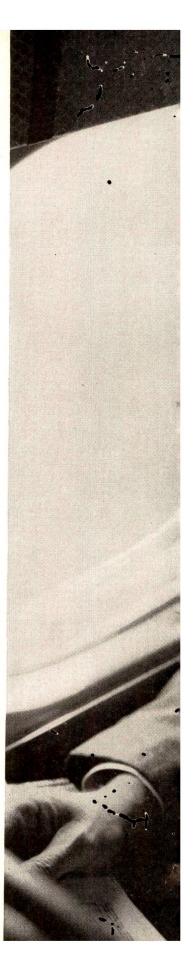
Suttle draws upon a fine academic background and years of experience to aid clinical researchers in the Southeastern United States, where he serves as a knowledgeable link with the Wyeth medical department.

The aid that Suttle offers may take many forms. Often it's specialized information and data, which may come from Suttle's own fund of knowledge or from Wyeth itself. Among other aids: searching out literature references, arranging for special supplies—matching placebos, say—and even helping locate hard-to-find equipment.

The Wyeth Clinical Associate is a familiar and welcome sight at medical research centers everywhere; like all members of the Wyeth team, he signifies service to medicine.

Wyeth Laboratories Philadelphia 1, Pa.









controls the acute psychotic episode

elicits continuing cooperation

promotes accessibility

LITERATURE SUPPLIED ON REQUEST

## Sparine

HYDROCHLORIDE

Promazine Hydrochloride, Wyeth
INJECTION TABLETS SYRUP

References: 1. Frain, M.K.: J. Nerv. & Ment. Dis. 125:529 (Oct.-Dec.) 1957. 2. Graffeo, A.J.: New York State J. Med. 58:2056 (June 15) 1959. 3. Lesse, S.: Am. J. Psychiat. 113:984 (May) 1957.

Wyeth Laboratories, Philadelphia 1, Pa.



A Century of Service to Medicine



LIFT THE DEPRESSION

Lift the depression with Marplan. Therapeutically, Marplan is a new, more active amine oxidase regulator. Clinically, it is safer. Medically, it represents a major breakthrough in the chemotherapy of depression. Marplan has been evaluated by some 300 investigators who reported its use in more than 4000 patients. Results have been impressive—frequently dramatic, and side effects have been markedly fewer and less severe. Indications range from moderate to severe psychiatric disorders with associated symptoms of depression, withdrawal or regression. Marplan is also valuable as an adjunct in psychotherapy to facilitate the patient's responsiveness. Complete literature giving dosage, side effects and precautions is available upon request and should be consulted before prescribing.

Supplied: 10-mg tablets in bottles of 100 and 1000.

Bibliography: 1. H. F. Darling, W. Kruse, G. F. Hess and M. G. Hoermann, Dis. Nerv. System, 20:269, 1959. 2. W. B. Abrams, A. Bernstein, V. D. Mattia, Jr., R. J. Floody and L. O. Randall, Scientific Exhibit, American Medical Association Meeting, Atlantic City, N. J., June 8-12, 1959. 3. Reports on file in the Department of Pharmacology, Roche Laboratories. 4. Clinical reports on file, Roche Laboratories. 5. L. O. Randall and R. E. Bagdon, *Dis. Nerv. System*, 19:539, 1958. 6. W. Hollander and R. W. Wilkinson, in J. H. Moyer, Ed., Hypertension, Philadelphia, W. B. Saunders Co., 1959, p. 399. 7. R. W. Oblath, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 8. I. Kimbell, paper read at Cooperative Chemotherapy Studies in Psychiatry, 4th Annual Research Conference, Memphis, Tenn., May 20-22, 1959. 9. L. Alexander and S. R. Lipsett, Dis. Nerv. System, 20(Suppl.):26, 1959. 10. A. L. Scherbel and J. W. Harrison, Ann. New York Acad. Sc., 80:(3), 820, Sept. 17, 1959. 11. S. L. Cole, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 12. L. O. Randall and R. E. Bagdon, Second Marsilid Symposium, Chicago, Ill., May 8, 1958. 13. O. Resnick, Ann. New York Acad. Sc., 80:(3), 726, Sept. 17, 1959. 14. G. Zbinden and A. Studer, ibid., p. 873. 15. T. R. Robie, Dis. Nerv. System, 20:182, 1959.

MARPLAN T.M. - benzyl-2-(5-methyl-3-isoxazolylcarbonyl) hydrazine

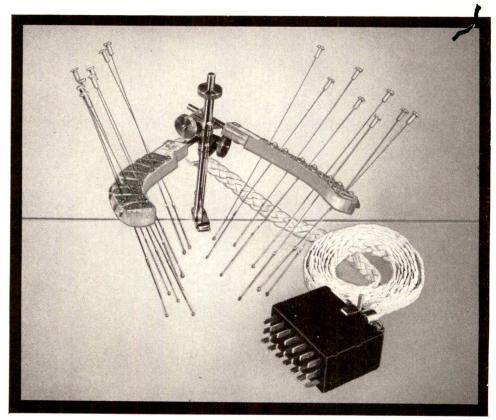
ROCHE®



ROCHE
LABORATORIES
Division of

Division of Hoffmann-La Roche Inc. Nutley 10, N. J.

achieves a happy balance of potency/safety



## FOR FLEXIBLE INSTRUMENTATION

#### **IN CORTICOGRAPHY**

Write for descriptive literature and prices on:
ELECTROMYOGRAPHS ELECTROENCEPHALOGRAPHS STRAIN GAGE AMPLIFIERS RECORDER PAPER ELECTRODES SHOCK THERAPY EQUIPMENT

- Completely universal and extendable arms and electrodes
- Up to 20 electrodes
- Easily removable individual electrode assemblies
- Fully autoclavable
- Spring mounted spherical silver electrodes

#### MEDCRAFT ELECTRONIC CORP.



designers and manufacturers of diagnostic and therapeutic equipment for the medical profession

426 GREAT EAST NECK ROAD, BABYLON, N.Y.

TEL. MOHAWK 9-2837

ADDRESS MAIL TO BOX 1006, BABYLON, N.Y.

## LOUDEN HALL

#### PRIVATE PSYCHIATRIC SANITARIUM

- Visiting psychiatrists may admit and treat their own patients on a daily or monthly basis.
- All facilities of adjacent Brunswick General Hospital, with which Louden
   Hall is now associated, are available for patient's care.
- Electro-Encephalography In-or-Out Patients

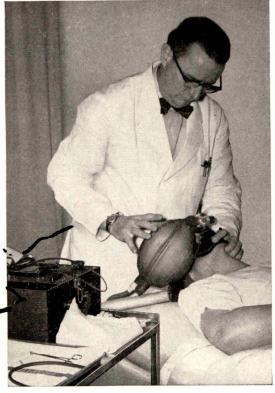
Resident psychiatrists and specially trained personnel are on the staff, as formerly, for the care and treatment of the mentally ill.

Psychiatrist in Charge:
DESMOND G. BOYLE
Diplomate of the American Board
of Psychiatry and Neurology

#### THE BRUNSWICK HOSPITAL CENTER, INC.

366 BROADWAY, AMITYVILLE, L. I., N. Y.

Tel.: AMityville 4-0053 Tel.: MUrray Hill 3-7012



for the breath
of life in
electroshock therapy
...the AMBU\*
resuscitation and
suction kit

- Hand operated Resuscitator for safe, efficient ventilation—with room air or oxygen
- Foot operated suction pump for safe aspiration of the airway
- No electricity required

Write for descriptive folder to Air-Shields, Inc., Hatboro, Pa.

Hatbore, Pa.



\*Trademark



## ANCLOTE MANOR



## on the Gulf of Mexico

#### A MODERN HOSPITAL FOR INTENSIVE PSYCHIATRIC TREATMENT

Owned and Operated by The Anclote Manor Foundation—A Non-Profit Organization SAMUEL G. HIBBS, M.D. — PRESIDENT

Dynamically Oriented For: Individual Psychotherapy, Group Psychotherapy, Therapeutic Community, All Somatic Therapies • Large Staff Trained for Team Approach • Supervised Recreational Program

Medical Director

Lorant Forizs, M.D.

Clinical Director

Walter H. Wellborn, Jr., M.D.

Director of Training

Peter J. Spoto, M.D.

Consultants in Psychiatry

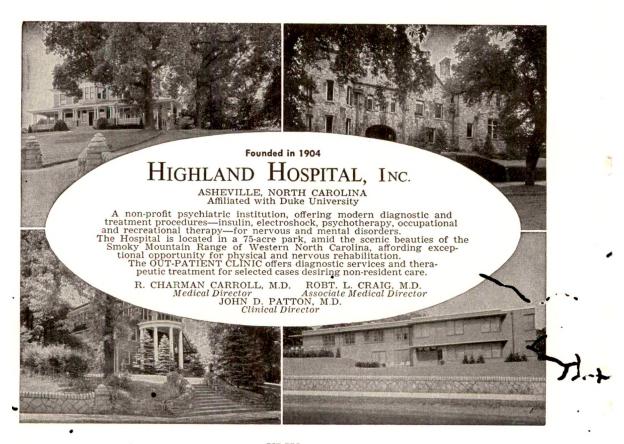
Samuel G. Hibbs, M.D. Samuel Warson, M.D.

Zack Russ, M.D. Walter Bailey, M.D. Arturo Gonzalez, M.D. Roger E. Phillips, M.D. Melvin Gardner, M.D. Martha McDonald, M.D.

Robert Steele, M.D.

#### TARPON SPRINGS, FLORIDA • VICTOR 2-1811

Approved by American Psychiatric Assn., Accredited by Joint Commission on Accreditation of Hospitals Member National Assn. of Private Psychiatric Hospitals, American Hospital Assn., Florida Hospital Assn.



#### **ROOK PUBLICATION**

The American Press invites your attention to our select list of scholarly and serious books. We specialize in the publication of text and reference books, regional studies, doctoral and specialized dissertations, and research projects in all fields that require careful and intelligent promotion programs. All aspects of book publication are handled by men of sales vision and keen editorial insight, discretion, and respect for learning to warrant the trust that you must inevitably place in a publisher.

We invite you to submit your manuscript for editorial consideration. You will be subjected to no high pressure sales devices. If we can include your work in our list, a contract will be made available for your study.

#### THE AMERICAN PRESS

Attn: Mr. Joslyn 489 Fifth Ave., N. Y., N. Y.

## THE BROWN SCHOOLS

#### FOR EXCEPTIONAL CHILDREN

The Brown Schools, in operation since 194D, has facilities for the private residential treatment of emotionally disturbed children and for the education of retarded children of all ages.

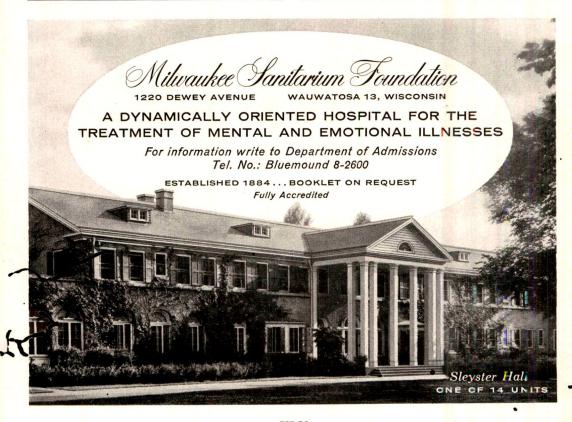
Specialists on our staff in psychiatry, psychology, medicine, social work, speech pathology and special education assure a well-rounded approach to the problem of the exceptional child.

Seven different suburban and ranch units make possible the placement of each child in a group best suited to his interests, age, ability, development and social adjustment.

We have recently prepared a comprehensive view book for your use in learning more about our schools and the services we offer. We invite you to write for a copy and also for any particular information you desire.

#### Please write:

Mrs. Nova Lee Dearing, Registrer
P. O. Box 4008 D
Austin, Texas



## FOR THE MENTALLY RETARDED CH

#### SIX COMPREHENSIVE PROGRAMS:

- Observation and Diagnosis
- Education and Training
- Residential Supervision

- Custodial Care
- Summer Program
- Psychiatric Treatment Center

The Training School at Vineland provides care and treatment for boys and girls 2 years or older with mental potential of 6 years. Complete professional staff. Electroencephalographic and neurological exams, individual psychiatric, psychological, physiological, and speech observations and therapies.

The educational program aims at maximum development of each child. Training includes self-care; group living; formal classroom education; development of practical habits, attitudes and work skills.

Children live in homelike cottages on 1600-acre estate. Hospital, school, chapel, lake, swimming pools, working farm.

Research Laboratory famed for continuous study of causes, prevention and treatment of mental retardation. Established 1888.

For information write: Registrar, Box N.



#### THE TRAINING SCHOOL AT VINELAND, NEW JERSEY

A private, non-profit residential center for the care and treatment of the mentally retarded.

#### HALL-BROOKE HOSPITAL

An Active Treatment Hospital, located one hour from New York

Accredited by: The Central Inspection Board of the American Psychiatric Association The Joint Commission on Accreditation of Hospitals

#### HALL-BROOKE, GREENS FARMS, BOX 31, CONN.

Telephone: WESTPORT CAPITAL 7-1251

George S. Hughes, M.D. Leo H. Berman, M.D.

Albert M. Moss, M.D. Louis J. Micheels, M.D.

Robert Isenman, M.D.

John D. Marshall, Jr., M.D. Edward M. Keelan, M.D.

Peter P. Barbara, Ph.D.

#### THE BRETT SCHOOL

DINGMANS FERRY, PENNSYLVANIA

In the Footbills of the Poconos

Intensive, highly individualized personal training for a small group of girls over five years of age. Carefully chosen staff. Special modern teaching techniques and program of therapeutic education. Varied handicrafts, cooking, nature study and field trips. Outdoor games, picnics and other activities. Comfortable, homelike atmosphere. Close cooperation with family physician. 70 miles from New York City.



Frances M. King, formerly Director of the Seguin School References Catherine Allen Brett, M.A. Telephone Dingmans Ferry 8138



#### SANITARIUMS and PRIVATE HOSPITALS

#### BALDPATE, INC.

Geo. Fleetwood 2-2131

Georgetown, Mass.

Located in the hills of Essex County, 30 miles north of Boston

For the treatment of

psychoneuroses, personality disorders, psychoses, alcoholism and drug addiction.

Definitive psychotherapy, somatic therapies, pharmacotherapy, milieu-therapy under direction of trained occupational and recreational therapists.

HARRY C. SOLOMON, M.D. Consulting Psychiatrist

GEORGE M. SCHLOMER, M.D. Medical Director

## THE EMORY JOHN BRADY HOSPITAL 401 SOUTHGATE ROAD, COLORADO SPRINGS, COLORADO

MEIrose 4-8828

For the care and treatment of Psychiatric disorders.

Individual and Group Psychotherapy and Somatic Therapies.

Occupational, diversional and outdoor activities.

X-ray, Clinical Laboratory and Electroencephalography.

E. JAMES BRADY, M. D., Medical Director C. F. RICE, Superintendent

Francis A. O'Donnell, M. D. Robert W. Davis, M. D.

RICHARD L. CONDE, M. D.

H. C. Hobbs, Ph. D. Clinical Psychology

## BRIGHAM HALL HOSPITAL CANANDAIGUA, NEW YORK

FOUNDED 1855

Individual psychotherapy, occupational and recreational programs, shock therapy, selected cases of alcoholism and addiction accepted.

Special consideration for Geriatric cases.

HOWARD W. BERG, M.D., Medical Director

## CEDARCROFT SANITARIUM & HOSPITAL, INC. 12,101 COLUMBIA PIKE, SILVER SPRING, MD.

MAfair 2-1200

Nine miles from Washington, D. C. — In rural Maryland

Dedicated to the Care of neuropsychiatric disorders requiring special supervision and guidance. Individual and group psychotherapy, occupational and activity therapy emphasized. All other accepted therapies are available.

H. E. Andren, M. D. Medical Director

Member of N. A. P. P. H.

Accredited by Joint Commission on Accreditation of Hospitals

#### **COMPTON SANITARIUM**

820 WEST COMPTON BOULEVARD

COMPTON, CALIFORNIA

NE 6-1185 - NE 1-1148

Member of American Hospital Association and National Association of Private Psychiatric Hospitals

High Standards of Psychiatric Treatment . . . . . Serving the Los Angeles Area

Fully Approved by Central Inspection Board of APA

Accredited by Joint Commission on Accreditation of Hospitals

G. Creswell Burns, M.D.

Medical Director

HELEN RISLOW BURNS, M.D. Assistant Medical Director

#### FAIR OAKS

Incorporated

#### SUMMIT, NEW JERSEY

A 70-BED MODERN, PSYCHIATRIC HOSPITAL FOR INTENSIVE TREATMENT AND MANAGEMENT OF PROBLEMS IN NEUROPSYCHIATRY

20 MILES FROM NEW YORK CITY

OSCAR ROZETT, M. D.

Medical Director

TELEPHONE CRestview 7-0143

THOMAS P. PROUT, JR.

Administrator

#### Established

## FALKIRK HOSPITAL CENTRAL VALLEY, N. Y.

1889

TELEPHONE: HIGHLAND MILLS, NEW YORK, WABASH 8-2256

Devoted to the individual care and treatment of psychiatric disorders. An active therapy program and diversified buildings permits classification of patients.

Located 2 miles north of Harriman Exit (No. 16) N. Y. State Thruway 50 miles from New York City

Member N.A.P.P.H.

Fully approved by Central Inspection Board of APA Accredited by Joint Commission on Accreditation of Hospitals

T. W. NEUMANN, JR., M. D. Director CORNELIA B. WILBUR Clinical Director

## THE HAVEN SANITARIUM INC. ROCHESTER, MICHIGAN

M. O. Wolfe, M.D. Director of Psychotherapy

RALPH S. GREEN, M.D. Clinical Director

GRAHAM SHINNICK
Manager

A psychoanalytically oriented hospital for the treatment of mental and emotional illnesses.

Telephone: OLive 1-9441

Phone: CHestnut 7-7346

#### WINDSOR HOSPITAL

A Non Profit Corporation

CHAGRIN FALLS, OHIO

Established 1898

A hospital for the treatment of Psychiatric Disorders. Booklet available on request.

JOHN H. NICHOLS, M. D. Medical Director

G. PAULINE WELLS, R. N. Administrative Director

HERBERT A. SIHLER, JR. Secretary

MEMBER: American Hospital Association - Central Neuropsychiatric Hospital Association - National Association of Private Psychiatric Hospitals •

Accredited: by the Joint Commission on Accreditation of Hospitals

## CHESTNUT LODGE

DEXTER M. BULLARD, M.D., Medical Director MARVIN L. ADLAND, M.D., Clinical Director OTTO A. WILL, JR., M.D., Director of Psychotherapy DONALD L. BURNHAM, M.D., Director of Research

#### CLINICAL ADMINISTRATORS

MARTIN COOPERMAN, M.D.

JOHN L. CAMERON, M.D. JOHN P. FORT, JR., M.D.

ROBERT W. GIBSON, M.D. MICHAEL A. WOODBURY, M.D.

#### ASSOCIATES

CHARLES A. BAKER, M.D. CLAY F. BARRITT, M.D. MILTON G. HENDLICH, M.D. JOHN S. KAFKA, M.D. BERL D. MENDEL, M.D. CESAR MEZA, M.D. PING-NIE PAO, M.D. CLARENCE G. SCHULZ, M.D. HAROLD F. SEARLES, M.D. JOSEPH H. SMITH, M.D. BARBARA S. SOKOLOFF, M.D. WILHELM P. STIERLIN, M.D. YVONNE VAN der REYDEN, M.D. NAOMI K. WENNER, M.D.

#### CLINICAL PSYCHOLOGIST

MARION I. HANDLON, Ph.D.

#### INTERNISTS

CORINNE COOPER, M.D.

GEORGE SHARPE, M.D.

#### ROCKVILLE

#### MARYLAND

	ENTER NEW SUBSCRIPTIONS AND RENEWALS ON THIS FORM
	AMERICAN JOURNAL OF PSYCHIATRY 170 AVENUE OF THE AMERICAS, ROOM 1817 NEW YORK 20, NEW YORK 19 Date
	Enclosed herewith is \$ for one year's subscription to the AMERICAN JOURNAL
•	OF PSYCHIATRY beginning with Volume Number
. >	NAME Print
	ADDRESS
	SIGNATURE
	Subscription \$12.00 a year or by the Volume. Foreign Postage \$1.00 extra. Canada and South America Postage \$.50 extra. New Volume began July 1959 issue.



## 90% of anxious, agitated and apathetic office patients calmed without drowsiness and with normal drive restored...

on one or two 0.25 mg. tablets b.i.d.:

This is the pattern of performance for

Fluphenazine dihydrochloride

- In 608 patients with anxiety and anxiety-induced fatigue or depression, PERMITIL, administered in small daily doses of 0.5 mg. to 1 mg., produced significant improvement in 90%.\*
- Permitil is virtually free from side effects at recommended dosage levels.
- Patients become calm without being drowsy and normal drive is restored.
- Onset of action is rapid; effect is prolonged. Permitil does not potentiate barbiturates or non-barbiturate sedatives and can be used with impunity with such agents.

How to Prescribe PERMITIL: The lowest dose of Permitil that will produce the desired clinical effect should be used. The recommended dose for most adults is one 0.25 mg. tablet twice a day (taken morning and afternoon). Increase to two 0.25 mg. tablets twice a day if required. Total daily dosage in excess of 1 mg. should be employed only in patients with relatively severe symptoms which are uncontrolled at lower dosage. In such patients, the total daily dose may be increased to a maximum of 2 mg., given in divided amounts. Complete information concerning the use of PERMITIL is available on request.

Supplied: Tablets, 0.25 mg., bottles of 50 and 500.

\*Recent compilation of case reports received by the Medical Department, White Laboratories, Inc.

WHITE LABORATORIES, INC., Kenilworth, New Jersey

## FROM MARKED IMPROVEMENT to COMPLETE CONTROL

of GRAND MAL SEIZURES
with

## "MYSOLINE"

BRAND OF PRIMIDONE

#### wide margin of safety

CLINICAL EVALUATION OF 486 EPILEPTIC PATIENTS\* SHOWED THAT:

In patients who had received no previous anticonvulsant medication,

"Mysoline" therapy alone provided marked improvement to complete control of major motor attacks in the majority of patients.

In patients only partially controlled with maximum dosages of other anticonvulsants,

the addition of "Mysoline" therapy was followed by marked improvement to complete control of grand mal attacks in 39% of the patients.

In patients refractory to maximum dosages of other anticonvulsants,

"Mysoline" employed alone provided marked improvement to complete control of major motor attacks in 34% of the patients.

In 39 patients with mixed seizures,"Mysoline" provided improvement to marked control in 49% of the patients.

The dramatic results obtained with "Mysoline" advocate its use as first choice of effective and safe therapy in the control of grand mal and psychomotor attacks. Supplied: 0.25 Gm. scored tablets, bottles of 100 and 1,000. Literature on request.

<sup>o</sup>Livingston, S., and Petersen, D.: New England J. Med. 254:327 (Feb. 16) 1956.



New York 16, N. Y.

Montreal, Canada



#### INTEGRATED SERVICES

THE SLOW-LEARNER or the child with emotional difficulties needs the resources of an organization that has many different approaches to the problems involved. Through the Devereux multidisciplined approach, the psychiatrist, the physician, the psychologist, the educator, and the rehabilitation specialist pool experiences to give each boy and girl the environment and training best designed to meet his individual needs. Students are assigned to one of twenty-two semi-autonomous residential schools in Pennsylvania and similar groups in California and Texas.

#### CLINICAL STAFF

J. Clifford Scott, M.D.
Edwin H. Abrahamsen, M.D.
Aurelio Buonanno, M.D.
Charles M. Campbell, Jr., M.D.
Fred J. Culeman, M.D.
Ruth E. Duffy, M.D.
William F. Haines, M.D.
Robert L. Hunt, M.D.
Richard H. Lambert, M.D.
Leonardo Magran, M.D.
Joseph J. Peters, M.D.
Alvis J. Scull, M.D.
Jacob S. Sherson, M.D.
Albert S. Terzian, M.D.
Walter M. Uhler, M.D.
Tirso L. Vinueza, M.D.

Lance Wright, M.D.
F. Ellsworth Henry, S.T.D.
Milton Brutten, Ph.D.
William J. Cohen, Ph.D.
Dorothy E. Conrad, Ph.D.
Sidney L. Copel, Ed.D.
Michael B. Dunn, Ph.D.
Shirley M. Jahnson, Ph.D.
John R. Kleiser, Ph.D.
Murray Levine, Ph.D.
Henry Platt, Ph.D.
Edgar A. Smith, Ed.D.
George Spivack, Ph.D.
Herbert A. Sprigle, Ph.D.
Anne Howe, M.S.
Kenneth E. Evans, B.S.

Psychoanalytic Consultants

G. Henry Katz, M.D.

Herbert H. Herskovitz, M.D.

#### THE DEVEREUX FOUNDATION

A nonprofit organization Founded 1912
Devon, Pennsylvania
Santa Barbara, California Victoria, Texas

SCHOOLS COMMUNITIES CAMPS TRAINING RESEARCH

HELENA T. DEVEREUX
Administrative Consultant

EDWARD L. FRENCH, Ph.D. Director

WILLIAM B. LOEB
Treasurer

Professional inquiries for Eastern Schools should be directed to Charles J. Fowler, Registrar, Devereux Schools, Devon, Pa.; for Pacific Coast Schools, to Keith A. Seaton, Registrar, Devereux Schools in California, Santa Barbara, Calif.; Southwestern residents address Devereux Schools in Texas, Box 336, Victoria, Tex.

# THE AMERICAN JOURNAL of PSYCHIATRY

VOLUME 116 NUMBER 11 MAY 1960

Official Journal of THE AMERICAN PSYCHIATRIC ASSOCIATION



## proven effective and outstandingly safe

- · simple dosage schedule produces rapid, predictable tranquilization without unexpected excitation
- · no cumulative effects, thus no need for difficult dosage readjustments
- · does not produce ataxia, change in appetite or libido
- · no danger of hypotension, depression, Parkinsonlike reactions, jaundice or agranulocytosis
- · does not impair mental efficiency or normal behavior

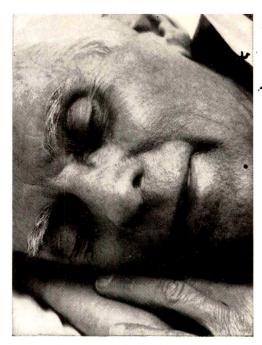
*Usual dosage:* One or two 400 mg. tablets t.i.d. Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; or as MEPROTABS\*-400 mg. unmarked, coated tablets.





1960

GENETIC FACTORS IN SCHIZOPHRENIA. Ian Gregory	961
EVALUATION OF TRANQUILIZING DRUGS IN THE MANAGEMENT OF ACUTE MENTAL DISTURBANCE. D. Wilfred Abse, W. Grant Dablstrom, and A. Granville Tolley	973
MEDICO-LEGAL ASPECTS OF POST-TRAUMATIC EPILEPSY. Irwin N. Perr	981
THE EFFECT OF RESOCIALIZATION TECHNIQUES ON CHRONIC SCHIZOPHRENIC PA- TIENTS. Garfield Tourney, Rita Senf, Robert S. Glen, H. Warren Dunham, and Jacques S. Gottlieb	993
A CORRELATION OF SYMBOL ORGANIZATION WITH BRAIN FUNCTION. Robert Cohn	1001
SUBLIMINAL AND SUPRALIMINAL INFLUENCES ON DREAMS. Charles Fisher	1009
IN YOUNG VS. OLD ANIMALS DIFFERENTIAL RESPONSES TO TRAINING, CONFLICT, DRUGS AND BRAIN LESIONS. Curtis Pechtel, Jules H. Masserman, and Louis Aarons	1018
CLINICAL NOTES:	
A Rapid Urine Color Test for Imipramine (Tofrānil, Geigy): Supplementary Report with Color Chart. Irene S. Forrest, Fred M. Forrest, and Aaron S. Mason	
Reversibility of Drug-Induced Parkinsonism. Robert B. Cahan	1022
Responses of Treatment-Refractory Chronic Schizophrenics to Chlorpromazine with Concurrent Adrenocortical Steroid. Kisik Kim	1023
Experience with Trifluoperazine in the Treatment of 100 Chronic Anergic Schizophrenic	1026
Patients. Leon Reznikoff	
Trifluoperazine in Refractory Schizophrenic Patients. John M. Erdos, and Julius Hillinger	1026
Report of a Case of Convulsion and Skin Reaction Following Brief Oral Administration of Imipramine (Tofrānil). Daniel Gesensway, and Kenneth D. Cohen	1027
John C. Saunders	
Mellaril in the Treatment of Chronically Disturbed Patients: With Special Reference to Reduced Extrapyramidal Complications. Abdulaziz G. Khakee, and G. F. Hess	1029
Sleep Regulation With Thalidomide. Sidney Cohen	1030
Chan Danones	
CASE REPORTS:	
An Unusual Perversion: The Desire to be Injured by an Automobile Operated by a Woman.  Martin H. Keeler	
Transient Visual Symptoms Associated with Mellaril Medication. S. Bergen Morrison	
Transient Visual Symptoms Associated with Menath Medication, 5. Bergen Morrison	1032
HISTORICAL NOTES:	
Dr. Rufus Wyman of the McLean Asylum. Eric T. Carlson, and May F. Chale	1034
Johann Christian Reil (1759-1813). Ernest Harms	
COMMENTS:	
Regional Psychiatry	1040
American Child Psychiatry, Ltd.?	1040
CORRESPONDENCE:	10/2
Funkenstein Test	1042
Funkenstein Test	1043
News and Notes	1044
BOOK REVIEWS	1048
IN MEMORIAM:	
Richard Sherman Lyman	1055



# in the disturbed patient... UNTROUBLED SLEEP

NOLUDAR induces quiet sleep, even in patients with organic psychosis who have severe sleep resistance. Nighttime distortions and fears usually disappear; pre-sleep disorientation and agitation are reduced. NoLUDAR does not modify the EEG of the waking patient nor significantly alter the tracings of physiologic sleep. Further, NOLUDAR does not depress abnormal brain-wave activity. To provide sound, restful sleep without sacrificing safety, without prolonging awakening time, without altering the natural sleep pattern, specify NOLUDAR, the non-barbiturate hypnotic.

## NOLUDAR°300

NON-BARBITURATE HYPNOTIC

When a gentler hypnotic effect is desired, NOLUDAR 200 (200-mg tablets). For daytime sedation, NOLUDAR 50 (50-mg tablets).



# THE AMERICAN JOURNAL OF PSYCHIATRY

VOLUME 116

MAY 1960

No. 11

### **EDITOR**

CLARENCE B. FARRAR, M. D., 216 St. Clair Avenue, West, Toronto 7, Ont.

### BUSINESS MANAGER

Austin M. Davies, Ph. B., 1270 Avenue of The Americas, New York 20, New York

### ASSOCIATE EDITORS

WILLIAM RUSH DUNTON, JR., M. D. KARL M. BOWMAN, M. D.

Franklin G. Ebaugh, M. D. Walter L. Treadway, M. D.

STANLEY COBB, M. D. JOHN C. WHITEHORN, M. D.

S. Spafford Ackerly, M. D. Paul H. Hoch, M. D.

Leo Kanner, M. D. Titus H. Harris, M. D.

LAUREN H. SMITH, M. D. FRANCIS J. GERTY, M. D.

### EDITORIAL ASSISTANTS

MARCIA CUTHBERT, B. A.

SYLVIA L. LAMBERT, B. A.

### FORMER EDITORS, 1844-1931

AMARIAH BRIGHAM, M. D., Founder, 1844-1849

T. ROMEYN BECK, M. D. JOHN P. GRAY, M. D. G. ALDER BLUMER, M. D.

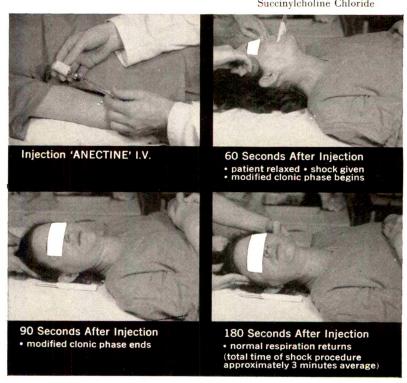
RICHARD DEWEY, M. D. HENRY M. HURD, M. D. EDWARD N. BRUSH, M. D.

Published by
THE AMERICAN PSYCHIATRIC ASSOCIATION
THE DARTMOUTH PRINTING COMPANY
HANOVER, N. H.

### SAFER ELECTROSHOCK THERAPY

- ultra-short-acting
- . şkeletal muscle

# relaxant ANECTINE brand



rapid relaxation rapid recovery

### Comments from the literature:

"... method of choice."

Havens, L. L.: Dis. Nerv. System 19:1 (Jan.) 1958.

"... recommend its use."

Impastato, D. J., and Gabriel, A. R.: Am. J. Psychiat. 114:698 (Feb.) 1958.

"... treatment of choice."

Michael, K. D., and Wunderman, D. C.: J. Nerv. & Ment. Dis. 126:535 (June) 1958.

"... irrespective of age."

Robie, T. R.: J. M. Soc. New Jersey 52:82 (Feb.) 1955.

Complete literature available upon request.

'Anectine'® brand Succinylcholine Chloride Injection: 20 mg. in each cc., multi-dose vials of 10 cc.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

### THE AMERICAN PSYCHIATRIC ASSOCIATION OFFICERS 1959-1960

President: WILLIAM MALAMUD
Vice President: FRANKLIN G. EBAUGH
Secretary: C. H. HARDIN BRANCH

President-Elect: ROBERT H. FELIX Vice President: S. Spafford Ackerly Treasurer: Addison M. Duval

### COUNCILLORS

For 3 years
Francis J. Gerty
Paul Hoch
Calvin Drayer
Aldwyn Stokes

For 2 years Harry C. Solomon Laurence C. Kolb Dana L. Farnsworth Robert T. Morse

For 1 year
FRANCIS J. BRACELAN
PAUL HUSTON
GEORGE TARJAN
JACQUES GOTTLIEB

### EXECUTIVE COMMITTEE

William Malamud Robert H. Felix C. H. Hardin Branch Addison M. Duval Francis J. Gerty Jacques Gottlieb

Ex-Officio
FRANKLIN G. EBAUGH
S. SPAFFORD ACKERLY

### ASSEMBLY OF DISTRICT BRANCHES

Alfred Auerback (Speaker) John R. Saunders (Speaker Elect)

(Recorder)

#### MEDICAL DIRECTOR

MATHEW Ross, 1700-18th Street, N. W., Washington 9, D. C.

### EXECUTIVE ASSISTANT

AUSTIN M. DAVIES, 1270 Avenue of the Americas, New York 20, New York

### CHAIRMEN OF COMMITTEES

CONSTITUTIONAL COMMITTEES

Arrangements
ROBERT GARBER
Board of Tellers
EVELYN IVEY
Membership
DICK McCool
Nominating
LEO BARTEMEIER

STANDING COMMITTEES
(Internal Activities

of the Association)

Budget

JACK R. EWALT

Constitution and By-Laws

HENRY A. DAVIDSON

Ethics

MESROP TARUMIANZ
House Committee
ZIGMOND LEBENSOHN
Increasing Responsibilities of
the APA

Harvey J. Tompkins Program

JOHN DONNELLY
STANDING COMMITTEES
(Technical Aspects)
HARVEY J. TOMPKINS
Coordinating Chairman

Aging
EWALD W. BUSSE
Child Psychiatry
J. FRANKLIN ROBINSON

History of Psychiatry
J. SANBOURNE BOCKOVEN
Medical Education
GEORGE C. HAM
Mental Deficiency
HOWARD BAIR
Public Health
JAMES V. LOWRY

JAMES V. LOWRY
Rehabilitation
BENJAMIN SIMON

Research
MILTON GREENBLATT
Therapy

HENRIETTE R. KLEIN
STANDING COMMITTEES

(Professional Standards)
WILFRED BLOOMBERG
Coordinating Chairman
Psychiatry and the Law
LOUIS GENDREAU
Liaison with American Academy
ROBERT MATTHEWS
Liaison with American Hosbital

Liaison with American Hospital Association RAYMOND W. WAGGONER

Mental Hospitals
Joseph E. Barrett
Nomenclature and Statistics
Moses Frohlich
Private Practice
John Cotton

Psychiatric Nursing
GRANVILLE JONES
Psychiatric Social Work
MAURICE FRIEND

Relations with Psychology
JOEL S. HANDLER

Standards and Policies of Hospitals and Clinics STEWART GINSBERG

STANDING COMMITTEES
(Community Aspects of Psychiatry)
PAUL LEMKAU

Cooperation with Leisure Tim

Cooperation with Leisure Time Agencies ALEXANDER MARTIN Disaster and Civil Defense

EDWARD J. KOLLAR
Occupational Psychiatry
RALPH T. COLLINS
International Relations

LOTHAR KALINOWSKY
National Defense

BENJAMIN H. BALSER
Preventive Psychiatry
HENRY WORK
Public Information
HENRY LAUGHLIN
Religion and Psychiatry

EARL LOOMIS
Veterans
JULIUS SOBIN

SPECIAL COMMITTEE
Certification of Mental Hospital
Administrators

### intensive psychotherapy . . .

### and DEXAMYL® to keep depressive symptoms under control

brand of dextro amphetamine and amobarbital



Dexamyl's antidepressant, mood-lifting effect can often help you restore your patient's energy and drive—keep her depressive symptoms under control between psychotherapeutic interviews. In a recent article on the treatment of neurosis, Batten¹ reports, "Myerson observed that a combination of amphetamine derivatives with one of the barbiturates [as in 'Dexamyl'] helps to reestablish an approximately normal emotional state, thus bringing the latent forces... for cure or remission into play."

Caldwell and Nowers<sup>2</sup> state, "The particularly desirable results achieved in depressed, tense, 'nervous' women suggest that, for some patients, ['Dexamyl'] may be more appropriate than the widely used tranquilizers which create an attitude of indifferent calm." 'Dexamyl' is available as tablets, elixir and Spansule® sustained release capsules.

- Smith Kline & French Laboratories
- Batten, C.T.: California Med. 90:202 (March) 1959.
   Caldwell, W.G., and Nowers, W.: California Med. 88:380 (May) 1958.

leaders in psychopharmaceutical research



### AMERICAN JOURNAL OF PSYCHIATRY

### INFORMATION FOR CONTRIBUTORS

- Manuscripts—The *original* manuscripts of papers read at the annual meetings of the Association should be deposited with the Secretary during the meetings, or sent to the New York office promptly afterward. Do not deposit carbon copies.
  - Papers read at the annual meetings become the property of the Association. Not all papers read, however, can be published in the JOURNAL, and authors wishing to publish in other vehicles will first secure from the Editor the release of their manuscripts.

Papers will not be accepted for the annual program if they have been previously read at other meetings or if they have been already published.

Papers contributed during the year (not on the annual program) should be sent to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

- Style—Manuscripts should be typewritten, double spaced, on one side of the paper. They must be prepared in conformity with the general style of The American Journal of Psychiatry. Retain a carbon copy of manuscript and duplicates of tables, figures, etc., for use should the originals be lost in the mails.
- Multiple Authorship—The number of names listed as authors should be kept to a minimum, others collaborating being shown in a footnote.
- Illustrations—Authors will be asked to meet printer's costs of reproducing illustrative material. Copy for illustrations cannot be accepted unless properly prepared for reproductions. Wherever possible, drawings and charts should be made with India ink for photographic reproduction as zinc etchings. Photographs for halftone reproduction should be glossy prints. Illustrations should be as small as possible without sacrificing important detail. Redrawing or preparing illustrations to make them suitable for photographic reproduction will be charged to author.
- Authors' Corrections in Proofs—Corrections, additions or deletions made by authors are to be charged to them. These alterations are charged on a time basis at the rate of \$7.00 per hour. Proper editing of original manuscript is important to avoid the expense of correction.
- Tables—Tables should be typed on separate sheets. Tables are much more expensive to set than text material and should be used only where necessary to clarify important points. Authors will be asked to defray cost of excessive tabular material.
- References—References should be assembled according to author in a terminal bibliography, referred to in text by numbers in parentheses. Bibliographical material should be typed in accordance with the following style for journals and books respectively:
  - 1. Vander Veer, A. H., and Reese, H. H.: Am. J. Psychiat., 95: 271, Sept. 1938.
  - 2. Hess, W. R.: Diencephalon. New York: Grune & Stratton, 1954.

Abbreviations should conform to the style used in the Quarterly Cumulative Index Medicus.

The American Journal of Psychiatry, formerly The American Journal of Insanity, the official organ of The American Psychiatric Association, was founded in 1844. It is published monthly, the volumes beginning with the July number.

Articles appearing in this Journal do not necessarily reflect the official attitude of The American Psychiatric Association or of the Editorial Board.

The subscription rates are \$12.00 to the volume: Canadian subscriptions \$12.50; foreign subscriptions, \$13.00, including postage. Rates to medical students, junior and senior internes, residents in training during their first, second, or third training year, and also to graduate students in psychology, psychiatric social work, and psychiatric nursing, \$5.00 (Canada \$5.50). Single issues, \$1.25. Copyright 1960 by The American Psychiatric Association.

Office of Publication, 10 Allen St., P.O. Box 832, Hanover, N. H.

Business communications, remittances and subscriptions should be addressed to The American Psychiatric Association, 10 Allen St., P.O. Box 832, Hanover, N. H., or to 1270 Avenue of the Americas, New York 20, N. Y.

Editorial communications, books for review, and exchanges should be addressed to the Editor, Dr. Clarence B. Farrar, 216 St. Clair Avenue, West, Toronto 7, Ontario, Canada.

Second class postage paid at Hanover, New Hampshire.

### 38 NEW BOOKS FOR PSYCHIATRISTS

Alexander, Leo—MULTIPLE SCLEROSIS, PROGNOSIS AND TREATMENT (Amer. Lec. Objective Psychiatry). Pub. date June '60, about 128 pp., 63 il.

Barbara, Dominick A.—SPEECH AND HEARING DISORDERS. Pub. date June '60

Bodyr, Eli M.—EARLY IDENTIFICATION OF EMOTIONALLY HANDICAPPED CHILDREN IN SCHOOL (Amer. Lec. Psychology). Pub. date May•'60, about 120 pp., 24 il.

Bowers, Warner F.—INTERPERSONAL RELATIONSHIPS IN THE HOSPITAL. Pub. Feb. '60, 136 pp., \$5.00

Cumings, John M., and Michael Kremer—BIO-CHEMICAL ASPECTS OF NEUROLOGICAL DISORDERS. Pub. Jan. '60, 240 pp., 39 il., \$8.75 de Martino, Manired F.—DREAMS AND PERSONALITY DYNAMICS. Pub. Dec. '59, 400 pp., \$10.50

Denber, Herman C. B.—RESEARCH CONFER-ENCE ON THERAPEUTIC COMMUNITY. Pub. Jan. '60, 288 pp., 10 il., \$11.00

Drzazga, John—SEX CRIMES AND THEIR LEGAL ASPECTS (Police Science Series). Pub. date May '60, about 256 pp.

Ehrentheil, Otto F., and Walter E. Marchand—CLINICAL MEDICINE AND THE PSYCHOTIC PATIENT. Pub. date April '60, 408 pp., 34 il., \$10.75

Ewing, I. R., and A. W. Ewing—NEW OPPOR-TUNITIES FOR DEAF CHILDREN. Pub. date May '60, about 157 pp., 7 charts

Featherstone, Robert M., and Alexander Simon—A PHARMACOLOGIC APPROACH TO THE STUDY OF THE MIND (40 Authorities Contribute). Pub. Dec. '59, 428 pp., 90 il., \$10.75

Ford, Frank R.—DISEASES OF THE NERVOUS SYSTEM: In Infancy, Childhood and Adolescence (4th Ed.). Pub. Dec. '59, 1568 pp. (6½ x 10), 176 il.. \$29.50

Gal'agher, James J.—THE TUTORING OF BRAIN-INJURED MENTALLY RETARDED CHILDREN, Pub. date June '60, about 224 pp., 28 il.

Grinker, Roy R., Paul C. Bucy, and Adolph L. Sahs—**NEUROLOGY** (5th Ed.). Pub. date Dec. '59, 1408 pp. (6½ x 10), 455 il., \$24.50

Haessler, F. Herbert—EYE SIGNS IN GENERAL DISEASE. Pub. date May '60, about 248 pp., 6 il.

Harrower, Molly, Pauline Vorhaus, Melvin Roman, and Gerald Bauman—CREATIVE VARIATIONS IN THE PROJECTIVE TECHNIQUES (Amer. Lec. Psychology). Pub. May '60, 160 pp., 32 il., \$8.50 Hermann, Knud—READING DISABILITIES: A Study of Word Blindness and Related Handicaps.

Isbister, Claire—WHAT IS YOUR PROBLEM, MOTHER? Pub. date June '60, about 222 pp., 12 il. Jefferson, Sir Geoffrey—SELECTED PAPERS. Pub. date June '60, about 564 pp., 69 il.

Pub. Jan. '60, 184 pp., 31 il., \$5.50

Jones, Morris Val—**BABY TALK.** Pub. date May '60, 104 pp., 9 il., \$4.50

Jones, Richard M.—AN APPLICATION OF PSY-CHOANALYSIS TO EDUCATION (Amer. Lec. Psychology). Pub. date May '60, about 123 pp.

Kalmus, H., and S. J. Hubbard—THE CHEMICAL SENSES IN HEALTH AND DISEASE (Amer. Lec. Living Chemistry). Pub. date May '60, 104 pp., 10 il., \$3.75

Krafit-Ebing, Richard von—ABBERATIONS IN SEXUAL LIFE. Pub. date May '60, about 240 pp. LaFia, D. J.—NEUROLOGY SIMPLIFIED: A Practical Approach to the Early Diagnosis and Treatment of Neurologic Diseases Written Especially for General Practitioners and Students. Pub. date May '60, 196 pp., 31 il., \$6.75

Lim, Robert K. S., Chan-Nao Liu and Robert L. Moffitt—A STEREOTAXIC ATLAS OF THE DOG'S BRAIN. Pub. Feb. '60, 102 pp. (8½ x 11), 192 il., \$9.25

Meares, Ainslie—SHAPES OF SANITY: A Study in the Therapeutic Use of Modeling in the Waking and Hypnotic State. Pub. Dec. '59, 480 pp., 194 il., \$13.50

Mecham, Merlin J., Martin J. Berko and Frances G. Berko—SPEECH THERAPY IN CEREBRAL PALSY (Amer. Lec. Speech and Hearing). Pub. date June '60, about 360 pp.

Mendelson, Myer—PSYCHOANALYTIC CON-CEPTS OF DEPRESSION. Pub. date May '60, about 176 pp.

Oester, Y. T., and John H. Mayer, Jr.—MOTOR EXAMINATION OF PERIPHERAL NERVE INJURIES. Pub. June '60, about 96 pp. (7 x 10), 125 il.

Pittman, David J.—ALCOHOLISM: An Interdisciplinary Approach (16 Expert Contributors). Pub. Nov. '59, 114 pp., \$3.75

Quastel, J. H., and David M. J. Quastel—CHEMISTRY OF BRAIN METABOLISM IN HEALTH AND DISEASE (Amer. Lec. Living Chemistry). Pub. date June '60, about 144 pp.

Sarwer-Foner, G. J.—THE DYNAMICS OF PSY-CHIATRIC DRUG THERAPY (Authoritative Contributions by 38 Authors). Pub. May '60, 648 pp., 21 il., \$16.00

Scheffler, Israel—**THE LANGUAGE OF EDUCA-TION** (Amer. Lec. Philosophy). Pub. date June '60, about 108 pp.

Schneck, Jerome—A HISTORY OF PSYCHIATRY. Pub. May '60, 204 pp., 5 il., \$5.50

Spurling, R. Glen—PRACTICAL NEUROLOGI-CAL DIAGNOSIS (6th Ed.). Pub. Feb. '60, 304 pp., 70 il., \$6.75

Tanner, J. M.—STRESS AND PSYCHIATRIC DISORDERS. Pub. date June '60, about 146 pp., 19 tables, 9 il.

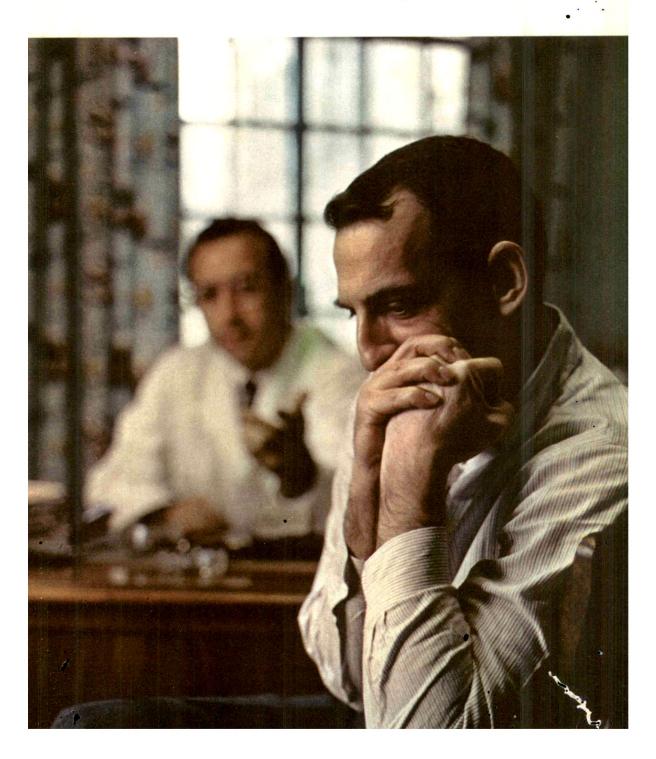
Towbin, Abraham—THE PATHOLOGY OF CEREBRAL PALSY: The Causes and Underlying Nature of the Disorder. Pub. date June '60, about 240 pp., 69 il.

Tower, Donald B.—NEUROCHEMISTRY OF EPILEPSY: Seizure Mechanisms and Their Management (Amer. Lec. Living Chemistry). Pub. May '60, 348 pp., 30 il., \$9.00

CHARLES C THOMAS • PUBLISHER 301-327 East Lawrence Avenue SPRINGFIELD • ILLINO



# Trilafon helps avoid apathy of sedation controls tension while maintaining a clear sensorium



# Trilafon helps the psychofic tunction more effectively—shortens hospitalization<sup>1</sup>

Responsive psychotic patients on TRILAFON exhibit "...dramatic gaining of insight and appropriate judgement...clarity of thought and a clear understanding..."

Available as Tablets, Injection, Liquid Concentrate. Consult Schering literature for indications, dosage and dministration, precautions and contraindications.

leferences: (1) Ayd, F. J., Jr.: New England J. Med. 261:172, 1959. (2) Morgan, D. R., and van Leent, J. P.: M. J. Australia 45:696, 1958.

. 416



### in depression...positive and invaluable therapeutic results, but

### PLEASE DO NOT PRESCRIBE



UNLESS - - - the cautions and provisions for the use of this drug can be consistently applied to the management of your patients. 
We make this request now because our surveys indicate that in approximately 50 per cent of patients, prescribed dosage of CATRON is higher than recommended, or prescriptions are not limited to amounts small enough to insure frequent return of the patient for observation. Also, in some instances, therapy was unduly prolonged. 
CATRON has displayed outstanding efficacy in depression, angina, and rheumatoid arthritis. But because of the nature of MAO inhibitor therapy, your attention is directed to the extensive and useful instructions prominently displayed in our literature on CATRON, and repeated below.

HOW TO USE CATRON: CATRON is a monoamine oxidase (MAO) inhibitor useful in the treatment of depression and of other disorders indicated below. It is recommended for use in carefully selected cases and in those patients who have not responded to the milder drups.

have not responded to the milder drugs.

ADMINISTRATION AND DOSAGE: Dosage of CATRON must be individualized according to each patient's response. The initial daily dose should not exceed 12 mg. and should be reduced as soon as the desired clinical effect is obtained. A single daily dose in the morning is recommended. A continuous or interrupted schedule may be used, the latter during the maintenance period.

DEPRESSION (Endogenous, Reactive, Postpartum, Involutional, and Depression Secondary to Schizophrenic or Neurotic Reaction): initially, 12 mg. once daily for approximately 2 weeks, or less if improvement appears. Dosage is then reduced to 6 mg. daily. As improvement continues, maintenance dosage of 6 mg. every other day or of 3 mg. daily often proves satisfactory. An interrupted dose schedule is recommended for long-term therapy.

ANGINA PECTORIS: 3 to 6 mg, daily in most cases. Relief of pain and elevation of mood may be dramatic. Victims of angina pectoris who respond in this manner should be cautioned against overexertion induced by their sense of well-

RHEUMATOID ARTHRITIS (Adjunctive Therapy—in severely disabling forms, particularly when accompanied by depression): 9 to 12 mg. daily for 3 days, then 6 mg. daily, reducing further to 3 mg. daily on signs of improvement. If a conventional antiarthritic agent is used, lower doses of each are indicated.

CAUTION: Certain circumstances should be watched carefully when using CATRON.

DRUG POTENTIATION—The list of drugs which CATRON potentiates is not yet complete. Hence, caution should be exercised when combining CATRON with any other drugs such as tranquilizers, phenothiazines, the amphetamines, barbiturates, and hypotensive agents.

HYPOTENSIVE EFFECT—Patients receiving CATRON, but especially elderly and hypertensive patients, should be warned about the possibility of orthostatic hypotension during the initial period of higher dosage. In the few instances where this may occur, lowering of the dose will usually permit continuation of therapy.

VISUAL DISTURBANCES—A reversible red-green color defect has been reported in a few patients, chiefly hypertensives, on extended therapy with CATRON. Discontinue the drug if such changes occur. In a few instances, at unusually high dosage, or where the drug was administered following color disturbances, diminished visual acuity occurred which may be partially irreversible.

ANIMALS, NEUROLOGIC SIGNS—In toxicity studies with animals a neurologic syndrome has been observed, characterized by tremors, muscle rigidity and difficulty in locomotion.

Animals displaying this visible neurologic syndrome after prolonged parenteral administration usually disclosed a neurologic lesion at autopsy. In other animals these visible neurologic symptoms disappeared following cessation of the drug. No lesions were found after oral administration. Although extensive clinical experience has not shown such reactions to be a problem in humans in recommended dosage, should a similar neurologic disturbance occur, the possibility of drug action should be considered.

SIDE EFFECTS—Major side effects requiring cessation of therapy are infrequent. Other side effects—constipation, delay in starting micturition, increased sweating, hyper-eflexia, ankle edema, blurring of vision, dryness of the mouth—are usually readily controlled by lowering the dosage. Rash, observed in a few patients, cleared up rapidly upon discontinuing therapy.

tinuing therapy.

WARNING: Although pharmacologic evidence indicates that CATRON has a selectivity for the brain, it, as well as other monoamine oxidase inhibitors, may cause hepatitis. Because of the possibility of this life-threatening hepatitis, and of other effects discussed above, the following recommendations and precautions should be observed. If necessary, the patient should be hospitalized to expedite adherence to this regimen.

The Following Precautions Are Recommended:

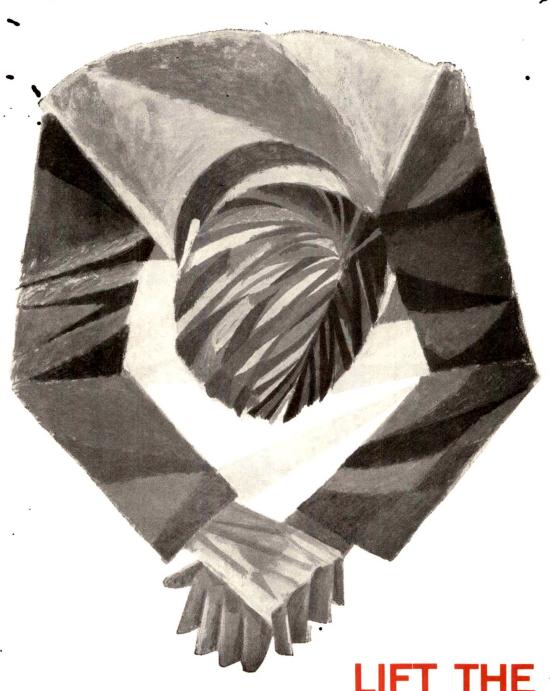
- 1. Do not use the drug in patients with a history of viral hepatitis or other liver abnormalities.
- 2. Perform regular liver function tests.
- 3. In all instances daily dose should not exceed 12 mg.
- 4. Reduce daily dose as soon as response is established, usually in a matter of 1 to 2 weeks.
- 5. Do not prescribe to a patient more than sixteen 6 mg. tablets or thirty-two 3 mg. tablets of CATRON at one time.
  6. Patient should return for observation before acditional CATRON is prescribed. For this reason, prescriptions for CATRON should be marked, "Not refillable."

SUPPLIED: CATRON is the original brand of pheniprazine hydrochloride. It is supplied in tablets of 3 mg, and 6 mg., bottles of 50.

BIBLIOGRAPHY: (1) Agin, H. V.: The Use of JB-516 (CATRON) in Psychiatry, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (2) Bercel, N. A.: Pharmacologic Approach to the Study of the Mind, Springfield, III., Charles C Thomas, 1959, p. 331. (3) Kinross-Wright, J.: Panel Discussion of Psychic Erergizers, ibid. (4) Kinross-Wright, J.: Experience with JB-516 (CATRON) and Other Psychochemicals in Clinical Practice, Conference on Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958. (3) Horita, A., and Parker, R. G.: Comparison of Monoamine Oxidase Inhibitor, Sed. Proc. 50. Exer. Biof. & Med. 99:617, 1958. (6) Horita, A.: Beta-Phenylisopropylhydrazine A Monoamine Oxidase Inhibitor, Fed. Proc. 17:379, 1958. (7) Horita, A: The Pharmacology of the Monoamine Oxidase Inhibitor, in A Pharmacologic Approach to the Study of the Mind, Springfield, III., Charles C Thomas, 1959. p. 271. (8) Kennamer, R., and Prinzmetal, W.: Treatment of Angina Pectories with CATRON (JB-516), An. J., Cardiel, 3:542-1959, (9) Scherbel, A. L., and Harrison, J. W.: The Effects of Ipronlarid and Some Other Amine Oxidase Inhibitors, New York Academy of Sciences, Nov. 20-22, 1958.



Lakeside Laboratories, Inc • Milwaukee 1, Wisconsin



LIFT THE DEPRESSION

Lift the depression with Marplan. Marplan has been shown to be considerably more potent than certain other amine oxidase regulators. While clinically such increase in potency has heretofore been associated with increased side effects, Marplan strikes a happy balance of potency/safety. Marplan has shown markedly fewer of the side reactions of the hydrazines (such as orthostatic hypotension, constipation, jitteriness, peripheral edema, skin rash). Moreover, throughout the extensive clinical investigations, no liver damage has been reported. Marplan is an amine oxidase regulator, however, and like all of these agents, it is contraindicated in the presence of liver or kidney disease.

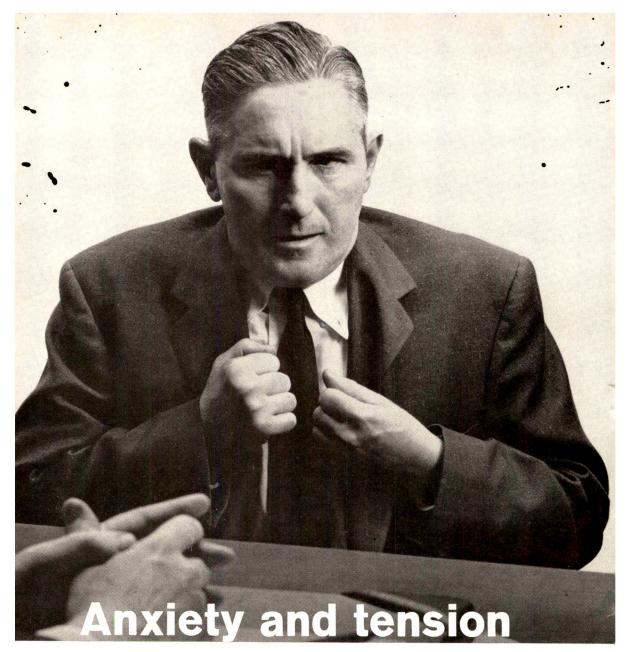
Indications range from moderate to severe psychiatric disorders with associated symptoms of depression, withdrawal or regression. Marplan is also valuable as an adjunct in psychotherapy to facilitate the patient's responsiveness. *Complete literature* giving dosage, side effects and precautions is available upon request and should be consulted before prescribing.

Supplied: 10-mg tablets in bottles of 100 and 1000.

Bibliography: 1. H. F. Darling, W. Kruse, C. F. Hess and M. G. Hoermann, Dis. Nerv. System, 20:269, 1959. 2. G. C. Griffith, Clin. Med., 6:1555, 1959. 3. R. B. Ford, H. E. Branham and J. J. Cleckley, ibid., p. 1559. 4. H. Azima, H. Durost, D. Arthurs and A. Silver, Am. J. Psychiat., 116:453, 1959. 5. L. Alexander and S. R. Lipsett, Dis. Nerv. System, 20:(Suppl.), 26, 1959. 6. H. F. Darling, Am. J. Psychiat., 116:355, 1959. 7. A. L. Scherbel and J. W. Harrison, Ann. New York Acad. Sc., 80:(Art. 3), 820, 1959. 8. L. O. Randall and R. E. Bagdon, ibid., p. 626. 9. G. Zbinden and A. Studer, ibid., p. 873. 10. O. Resnick, ibid., p. 726. 11. T. R. Robie, Dis. Nerv. System, 20:182, 1959. 12. A. Feldstein, H. Hoagland and H. Freeman, Science, 130:500, 1959. 13. L. O. Randall and R. E. Bagdon, Dis. Nerv. System, 19:539, 1958. 14. W. Hollander and R. W. Wilkins, in J. H. Moyer, Ed., Hypertension, Philadelphia, W. B. Saunders Co., 1959, p. 399. 15. 1. Kimbell and A. Pokorny, paper read at Symposium on Newer Antidepressants and Other Psychotherapeutic Drugs, Galveston, Texas, Nov. 13-14, 1959. 16. D. Goldman, ibid. 17. J. E. Oltman and S. Friedman, ibid. 18. G. Zbinden, ibid. 19. G. C. Griffith and R. W. Oblath, ibid. 20. H. Freeman, ibid. 21. W. B. Abrams, A. Bernstein, V. D. Mattia, Jr., R. J. Floody and L. O. Randall, Scientific Exhibit, American Medical Association Meeting, Atlantic City, N. J., June 8-12, 1959. 22. R. W. Oblath, paper read at American Therapeutic Society, 60th Annual Meeting, Atlantic City, N. J., June 6, 1959. 23. S. L. Cole, ibid. 24. I. Kimbell, Jr., paper read at Cooperative Chemotherapy Studies in Psychiatry, 4th Annual Research Conference, Memphis, Tenn., May 20-22, 1959. 25. L. O. Randall and R. E. Bagdon, Second Marsilid Symposium, Chicago, May 8, 1958. 26. W. B. Abrams, D. W. Lewis and M. C. Becker, paper read at the International Symposium on Catecholamines in Cardiovascular Pathology, Burlington, Vt., Aug. 23-26, 1959. 27. H. I. Russek, Angiology, to be published.

 ${\sf MARPLAN^{T.M.}-brand\ of\ isocarboxazid}$ 





### need not hinder therapy

Equanil subtly encourages acceptance of therapy in many patients suffering mild and moderate neuroses. By relaxing mind and muscle—without impairing mental and physical acuity—it helps you help patients toward new insights. Very often, Equanil permits patients to return to normal day-to-day activities while undergoing therapy.

EQUANIL is predictable in its actions. The efficacy of EQUANIL is thoroughly documented in hundreds of published clinical studies. Side-reactions are rargly encountered.

Side-reactions are rarely encountered.
Although rare, allergic reactions may occur; dosage and quantity prescribed should be carefully supervised. For further information on prescribing and administering EQUANIL see descriptive literature, available on request. Wyeth Laboratories Philadelphia 1, Pa.



New agent for parkinsonism



Akineton

brand of biperiden



### PARKINSON'S DISEASE

postencephalitic — idiopathic — arteriosclerotic

### DRUG-INDUCED EXTRAPYRAMIDAL DISORDERS

parkinsonism — dyskinesia — akathisia

### MUSCULAR SPASTICITY NOT RELATED TO PARKINSONISM

ACTION

Frequently diminshes akinesia, rigidity, and tremor with subsequent improvement in coordinated movement, gait, and posture. Masklike face disappears. Salivation and oily skin are decreased. Oculogyric crises are often lessened in intensity and frequency.

SIDE EFFECTS

DOSAGE

Minimum (mainly dry mouth or blurred vision).

Individual adjustment of dosage is necessary in all instances. Dose range extends from 2 mg. to 24 mg. daily, in divided doses.

AVAILABLE

Supplied as the hydrochloride salt, 2 mg. bisected tablets, bottles of 100 and 1000.

Complete information furnished upon request.

### KNOLL PHARMACEUTICAL COMPANY

(formerly Bilhuber-Knoll Corp.)

NEW JERSEY

# Tofranil brand of imipramine HCI

## in depression

In the treatment of depression Tofrāħil has established the remarkable record of producing remission or improvement in approximately 80 per cent of cases.<sup>1-7</sup>

Tofrānil is well tolerated in usage—is adaptable to either office or hospital practice—is administrable by either oral or intramuscular routes.

Tofrānil...a potent thymoleptic...not a MAO inhibitor. Does act effectively in *all* types of depression regardless of severity or chronicity.

Does not inhibit monoamine oxidase in brain or liver; produce CNS stimulation; or potentiate other drugs such as barbiturates and alcohol.

Detailed Literature Available on Request.

Tofrānil® (brand of imipramine HCl), tablets of 25 mg., bottles of 100. Ampuls for intramuscular administration only, each containing 25 mg. in 2 cc. of solution, cartons of 10 and 50.

References: 1. Ayd. F J., Jr.: Bull. School Med., Univ. Maryland 44:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. 81:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. 3:155, 1958. 4. Mann, A. M., and MacPherson, A. S.: Canad. Psychiat. A. J. 4:38, 1959. 5. Sloane, R. B.: Habib, A., and Batt, U. E.: Canad. M.A.J. 80:546, 1959. 6. Straker, M.: Canad. M.A.J. 80:546, 1959. 7. Strauss, H.: New York J. Med. 59:2906, 1959.

Geigy, Ardsley, New York

lights the road to recovery in 80 per cent of cases





# Why Deprol is the first drug to use in depressions

Clinical reports indicate that many depressions can be relieved by Deprol and psychotherapy, without recourse to more hazardous drugs or EST.

Deprol relieves the patient's related anxiety, insomnia and anorexia without danger of overstimulation, thus permitting better rapport to be established sooner, and facilitating more effective treatment.

Deprol acts without undue delay. Its effect can be determined quickly. If unusual cases require additional or alternative therapy, this will be quickly discernible.

Deprol can be controlled — there is no lag period of a week or two over which drug effects continue after medication is stopped. In cases where alternative therapy may be needed, it can be started at once.

Deprol is safe — does not produce liver damage, hypotension, psychotic reactions or changes in sexual function; does not interfere with other drug therapies.

## \*Deprol\*\*

Composition: Each tablet contains 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.

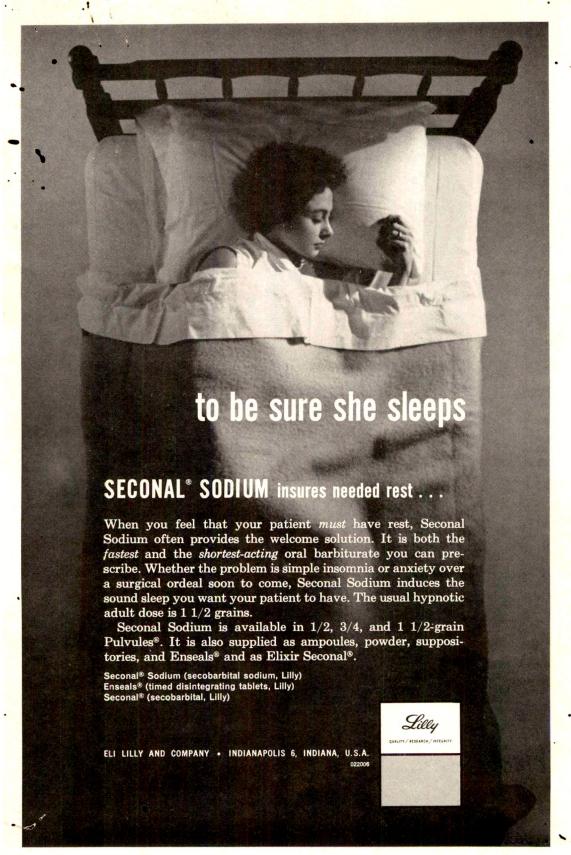
Supplied: Bottles of 50 light-pink, scored tablets.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.



Bibliography (11 elinical studies, 764 patients):

1. Alexander, L. (35 patients): Chemothercpy of degression—Use of meprobomate combined with benactyzine [1-diethylominoethyl benzilate] hydrochloride, J., A.M.A. (36, 1019, March 1, 1958. 2. Bateman, J. C. and Carlton, H. N. (50 patients). Meprobamate and benactyzine hydrochloride (Deproi) as adjunctive therapy for patients with advanced cancer. Antibiotic Med. & Clin. Therapy 6.48, Nov. 1959. 3. Bell, J. L. Tauber, H., Santy, A. and Pulito, F. (77 patients): Treatment of depressive states in office practice. Dis. Nerv. System 20:263, June 1959. 4. Breitner, C. (31 patients): On mental depressions-bis extraction of the patients. When the state of the patients with the state of the patients. Submitted for publication, 1960. 6. McClure C. W., Papas, P. N., Speare, G. S., Palmer, E., Slatter, J. J., Konefal, S. H., Henken, B. S., Wood, C. A. and Ceresso, G. B. (128 patients): Treatment of depression—New technics and therapy. Am. Pract. & Digest Treat. 10.1325, Sept. 1959. 7. Pennington, V. M. (135 patients): Meprobamate-be-actyzine (Deprol) in the treatment of chronic brain syndrome schizophrenia and senility. J. Am. Geriatrics Soc. 7.655, Aug. 1959. 8. Rickels, K. and Eving, J. H. (35 patients): Use of Deprol Imperations of the patients of depression in the elderly with a meprobymate-benactyzine phydrochloridal in the office treatment of depression. M. Ann. District of Columbia 28.438, Aug. 1959. 10. Settel, E. (52 patients): Treatment of depression in the elderly with a meprobymate-benactyzine hydrochlorida combination (Deprol). Antibiotic Med. & Clin, Therapy 7.28, Jun. 1960. 11. Splitter, S. R. (184 patients): The core of the anxious and the depressed. Submitted for publication, 1959.



### GENETIC FACTORS IN SCHIZOPHRENIA

IAN GREGORY, M.A., M.D.1, 2

Muller(27) has remarked that the heredity-environment controversy is an excellent example of wishful thinking by two sets of fanatical opponents, both of whom ought to know better. Neel and Schull (28) comment that the problem has often been approached with more bias than perspicacity, and that there is a tendency to overemphasize the material with which the observer is familiar. Continuing lack of certain knowledge concerning the etiology of most common forms of mental disorder is often compensated by strong emotional convictions and dogmatic assertions. It is the purpose of the present paper to examine critically certain hypotheses as to the role of genetic factors in the causation of schizophrenia.

It is well established that profound differences in human structure and function may result from either predominantly genetic endowment or environmental influences (particularly when the latter act during early stages in maturation). It is perhaps less generally recognized that very similar forms of abnormality may arise from different modes of inheritance, or from predominantly environmental experiences (either biological or psychosocial in nature). The significance of genetics in psychiatry is most clearly seen when rare hereditary traits are examined, such as Huntington's chorea or phenylketonuria, and the influence of heredity in the causation of the common mental illnesses is much more obscure (30). However, there is widespread agreement concerning the role of genetic factors in the determination of intelligence and mental deficiency (oligophrenia).

In spite of certain difficulties in definition and precise measurement, it is generally accepted that intelligence has a continuous

frequency distribution in the population that corresponds closely with the normal or . Gaussian curve. This quantitative variation has heritable and non-heritable determinants, the former being attributed to polygenes that are considered responsible for some 50 to 75% of the total variability(3, 33). The bulk of high-grade mental deficiency (associated with an Intelligence Quotient greater than about 50, and largely unaccompanied by gross brain pathology), corresponds with the lower end of the normal frequency distribution of intelligence. The bulk of low-grade mental deficiency, on the other hand, consists of a variety of clinical entities, commonly associated with gross brain pathology, attributable in some instances to environmental agencies (*e.g.*, anoxia, t=auma or infection) and in others to major genes (e.g., simple recessive inheritance in amaurotic idiocy, phenylketomiria, true microcephaly and gargoylism).

The importance of genetic factors in the etiology of other degenerations of the central nervous system is well recognized (36). However, with the single exception of the organic psychosis associated with Huntington's chorea, which is transmitted by a single dominant gene (31, 32), the role, of genetic factors in psychiatric disorders having their clinical onset during adult life is far less accurately established.

It has long been known that "functional" psychoses, psychoneuroses and other deviations of personality and behavior may be found in much higher frequencies among the relatives of affected individuals than in the population at large. Such intrafamilial concentration, however, has peen variously attributed to three different types of causation:—(a) similar genetic predisposition, (b) direct non-genetic transmission of disease-producing agents or experiences, (c) the sharing of similar exposures in a pathogenic environment.

In order to examine generic hypotheses of causation, two main approaches have

<sup>&</sup>lt;sup>1</sup> Assistant Professor of Psychiatry, University of Minnesota Medical School, Minneapolis 14, Minnesota.

<sup>2</sup> I am most grateful to Dr. William I Schull

<sup>&</sup>lt;sup>2</sup> I am most grateful to Dr. William J. Schull, Associate Professor of Human Genetics at the University of Mich., for helpful criticism and suggestions.

been adopted, either separately or in con-• junction: I. The investigation of twins including at least one affected member, 2. The estimation of frequencies of abnormality in various classes of relatives. Much more extensive data of both kinds are available on schizophrenia than on any other form of "functional" psychiatric disorder, due probably to two special sets of circumstances: 1. A presumed high degree of ascertainment, such cases tending to manifest severe and persistent signs of abnormality, which have traditionally led to admission to mental institutions, 2. The relatively high frequency of this diagnosis among both admissions and total population of such institutions (approximately 50% of the latter, due to early onset and tendency to chronicity).

### STUDIES ON TWINS

The genetic studies best known to psychiatrists in this country are probably those attempting to compare frequencies of schizophrenia in monozygotic and dizygotic cotwins of individuals diagnosed as schizophrenic. Theoretically, differences in the frequencies of concordance between the two types of twins might be expected to provide an accurate measurement of relative contributions of genetic and environmental factors, but there are a number of serious methodological difficulties which will be discussed below.

'A rough index of the proportion of phenotype variance attributable to "heredity" is obtained from the following formula (28):—

$$H = \frac{CMZ - CDZ}{100 - CDZ}$$

where CMZ and CDZ are the percentages of concordant MZ and DZ twins respectively. The results of applying this formula to data recorded by 5 investigators and tabulated by Kallmann (1953) are shown in Table 1, from which we might be tempted to conclude that the contribution of genetic factors in the development of schizophrenia is slightly higher than in the determination of intelligence.

It should be emphasized, however, that the validity of these studies is open to the following serious doubts (28, 42).

1. The diagnosis of schizophrenia is not • made by objective laboratory tests, but on the basis of clinical criteria that vary somewhat from one psychiatrist to another. Data recorded by Elkind and Doering and reproduced by Gruenberg(16) show a discrepancy of approximately 30% between diagnoses of schizophrenia (and other psychiatric disorders) made on the same individuals at Boston Psychopathic Hospital and various Massachusetts State Hospitals. It is to be hoped that there has been some improvement in uniformity of psychiatric diagnoses during the past 30 years, but Böök(2) suggests that some of Kallmann's recorded cases of schizophrenia would not have been diagnosed as such by European psychiatrists. Moreover, the problem of unconscious bias is introduced when the diagnosis of one twin is made with full knowledge of the status (and presumably diagnosis) of the twin partner. This is true whether diagnoses are made by the investigator at the time of entry of propositi into the study, or revised after some years of observation as in a number of Kallmann's

2. The diagnosis of zygosity. Using modern serological techniques to investigate twins and other close relatives (preferably both parents and siblings), it is possible to arrive at accurate probability statements as to zygosity (28). It is not yet established how closely the results of traditional methods of zygosity determination correspond with those of the more sophisticated serological techniques. However, Walker and Reid(42) made the following comments regarding Slater's(38) scrupulously documented study of psychotic and neurotic illnesses in twins:

. . . The differentiation between uniovular and binovular twins was based, in part, on similarity or history of similarity, and, in part, on anthropometric measurements such as digital patterns, height, hair color, eye color, and skull measurements. Unless the report is examined critically, the reader may fail to notice the large proportion of instances where the diagnosis of zygosity was based only on the first criterion—sometimes on photographs or hearsay, both cf which can be misleading. This is illustrated by the fact that of the true total of 61 uniovular twins there were 26 pairs for whom no fingerprints were available; these

TABLE 1
ESTIMATED CONCORDANCE RATES IN MONOZYGOTIC AND
DIZYGOTIC COTWINS OF
SCHIZOPHRENICS (a)

Investigator	Apparent Zygosity of Twins	Number of Pairs	Estimated Concordance Rate Percent	$H = \frac{CMZ - CD2}{100 - CDZ}$
Luxenburger, 1930	∫ MZ } DZ	21 60	66.6 3.3 }	0.655
Rosanoff, 1934	{ DZ	41 101	67.0 } 10.0 }	0.633
Essen-Möller, 1941	{ MZ } DZ	$7\\24$	71.4 16.7 }	0.657
Slater, 1953	{ MZ { DZ	41 115	76.3 } 14.4 }	0.723
Kallmann, 1953	∫ MZ ≀ DZ	268 685	86.2 <sub>1</sub> 14.5 <sub>5</sub>	0.839

(a) Modified after Kallmann (1953), Table 14, Page 145.

are all designated "? Uniovular." In any case, to base a diagnosis of zygosity on the dermatoglyphics of fingerprints alone (disregarding palmar and plantar configurations) is open to question.

Walker and Reid also pointed out that in a number of instances the verdict of an objective criterion such as fingerprints was ignored, and they cite two specific cases (involving three propositi, all classified as uniovular and concordant for schizophrenia) in which they regarded zygosity as definitely misdiagnosed.

3. A further point raised by these reviewers concerned the procedure of counting twin pairs twice wherever a pair contains two propositi. This procedure has been used by both Slater and Kaltmann and is considered appropriate, provided the abnormal individuals have been detected independently of one another (which may be difficult to judge in certain cases).

A number of potentially serious sources of bias in twin studies have been discussed in some detail by Neel and Schull (28), and may be grouped as follows:

 4. Unequal probabilities of ascertainment of the two classes of twins.

5. Biological biases with prenatal or

natal onset (natal factors, lateral inversions, and the effects of mutual circulation).

6. Biases of postnatal onset (due to greater environmental similarities for MZ than DZ twins).

In view of all the preceding difficulties, it must be concluded that the results of twin studies hitherto conducted leave considerable doubt concerning the precise contribution of genetic factors in the etiplogy of schizophrenia. An attempt will now be made to examine the evidence derived from recorded frequencies of schizophrenia in the relatives of schizophrenics.

### THEORETICAL AND RECORDED FREQUENCIES OF SCHIZOPHRENIA IN RELATIVES OF SCHIZOPHRENICS

By combining data obtained in the course of his own extensive longitudinal study with those recorded in 19 other European investigations, Fremming (11) estimated the lifelong expectation of schizophrenia in the general population as  $0.80 \pm 0.08\%$ , a figure which has found wide acceptance both in Europe and North America. (Fates in the two sexes did not differ significantly). On the basis of this estimate, the theoretical expectancy of schizophrenia may be

TABLE 2
THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA, IF INHERITED THROUGH

Completely Dominant or Recessive Autosomal Genes, and Frequencies Recorded by Various Investigators

Category		Expectancy	Frequencies Recorded
		d Through	(Corrected for Age) with Standard Errors
•	Completely Dominant	Completely Recessive	with Standard Errors
	Gene	Gene	
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- Gene	0.000 ± 0.0000 /17 1051
General population	0.000	0.010	$0.008 \pm 0.0008$ (Fremming, 1951)
Children of first cousins	0.008	0.013	0.011 (quoted by Slater, 1958)
Relatives of schizophrenics (a) Parents	0.503	0.089	{0.093 ± 0.008 (Kallmann, 1950) {0.041 ± 0.011 (Slater, 1953)
Children (b)	0.503	0.089	0.164 ± 0.013 (Kallmann, 1938)
Children of <i>two</i> schizophrenics	0.751	1.000	$ \begin{cases} 0.634 \pm 0.075 \text{ (Kallmann, 1938)} \\ 0.454 \pm 0.063 \text{ (Schulz, 1940)} \\ 0.392 \pm 0.130 \text{ (Elsässer, 1952)} \end{cases} $
Full siblings	0.503	0.297	$\{0.142 \pm 0.008 \text{ (Kallmann, 1950)} \\ \{0.054 \pm 0.009 \text{ (Slater, 1953)} \}$
DZ cotwins	0.503	0.297	0.003 to 0.167 See Table 1
MZ cotwins	1.000	1.000	0.666 to 0.862
Half siblings	0.256	0.152	0.071 ± 0.029 (Kallmann, 1950)
Nephews & nieces	0.252	0.047	0.039 (quoted by Kallmann, 1946)
First cousins	0.133	0.028	0.026 (quoted by Kallmann, 1946)

<sup>(</sup>a) Ascertained through affected individuals.

calculated for different classes of relative, under various hypothetical modes of genetic transmission (involving varying gene frequencies and rates of manifestation in homozygotes and/or heterozygotes).

Theoretical expectancies in relatives, under the alternative hypotheses of simple monohybrid autosomal dominance or recessivity (each with complete penetrance and expressivity) are shown in Table 2, together with the actual estimates recorded by various investigators. It is evident that the latter dc not conform with the theoretical expectancies under either of these simple hypotheses, but they appear closer to the expectancies associated with the hypothesis of complete recessivity than to

those associated with complete dominance.

Under the hypothesis of simple recessivity, the theoretical expectation of schizophrenia in MZ cotwins, and in the children of two schizophrenics, is 100%, whereas recorded estimates (corrected for age) are considerably lower. Kallmann (19, 20, 21, 22) has long maintained that the potentiality for schizophrenia is inherited as a. simple recessive unit characteristic with incomplete penetrance and expressivity, determined by "a genetically non-specific constitutional defense mechanism" (polygenic in nature). He cites as evidence the distribution of the trait in affected families. and also an excess of consanguineous mare riages among the parents of schizophrenics

<sup>(</sup>b) Children of either one or two schizophrenics.

(approximately 5% of his American index cases being offspring of consanguineous matings).

Böök(2), however, points out that under this hypothesis the frequency in children should not be higher than in siblings, and the risk in siblings with one schizophrenic parent should be higher than in those with two normal parents (not found by Kallmann). He also argues that it would be necessary to assume an assortative mating of 94%, and that the high rate of consanguinity would not be expected for a genetic trait with a frequency as high as nearly 1%.

During the course of his own extensive and careful study of a North Swedish isolate, Böök recorded the following estimates of morbid risks: population 3%, parents 12%, siblings of propositi of two non-schizophrenic parents 9%, and siblings of propositi of one schizophrenic and one non-schizophrenic parent 12%. He examined three alternative monohybrid genetic hypotheses, involving 1. Recessivity with variable penetrance in the homozygote, 2. Partial dominance with equal variable penetrance in heterozygote and homozygote, 3. Partial dominance with variable penetrance in the heterozygote and 100% penetrance in the homozygote. From his analysis he concluded that "the type of schizophrenia prevalent in the investigation area was due primarily to a major simple dominant gene with a heterozygous penetrance of about 20% and a homozygous penetrance of about 100%. The frequency of the gene in the population was estimated at about 7%."

The present writer, however, considers that Böök's three formulae for morbid risks of schizophrenia in parents of schizophrenics are incorrect (and hence also the estimates of gene frequency he derived from them, and applied in computing morbid risks in siblings). In each instance the formulae he presented as "frequency of affected individuals among parents of schizophrenics" appear to be in fact the a priori expectancies of affected children from all matings capable of producing affected offspring. Observed frequencies in parents of sch zophrenics are, however, obtained a posteriori through their affected offspring. and it therefore appears appropriate to

derive the relevant theoretical expectancies by means of Bayes' theorem. If this is done, is may be shown that these a posteriori expectancies in the parents of affected individuals are in fact identical with the a priori expectancies in the children of these same affected persons. The following is a general statement of the relevant expectancies for the case of two alleles: A and a having frequencies p and q (= 1-p) respectively:—

The probabilities (expectancies) of the various genotypes in parents and children of an AA individual are p (AA): q (Aa): O (aa), the probabilities in parents and children of an Aa individual are ½p (AA): ½ (Aa): ½q (aa), and the probabilities in parents and children of an aa individual are O (AA): p (Aa): q (aa). It may also be shown that phenotypic expectancies are the same in parents and children of given individuals, regardless of considerations of dominance and penetrance.

It is now proposed to examine briefly certain expected frequencies of schizophrenia in relatives of schizophrenics, under three hypotheses involving variable rates of manifestation in heterozygote and/or homozygote. For this purpose, the existence of a Hardy-Weinberg equilibrium is assumed (but will be discussed subsequently). In each situation the normal gene has been designated as A, occurring with frequency p in the population, and the gene assumed responsible for schizophrenia as a, with frequency q = 1-p. The rate of manifestation (under the conditions. specified for each hypothesis) has been recorded as m, each numerical value of which is associated with a single numerical value for q. The frequency of schizophrenia in the population (= s) is assumed throughout to be 0.008.

Hypothesis A. Simple recessivity with incomplete manifestation (m) in horozygote. (Table 3, Figure 1)

Three of the 4 phenotypes will be normal (AA, Aa, aa<sub>o</sub>) and the remaining one schizophrenic ( $aa_m$ ). Phenotypic frequencies in the population will be  $p^2$  (AA): 2 pq (Aa):  $(1-m)q^2$  ( $aa_o$ ):  $mq^2$  ( $aa_m$ ).

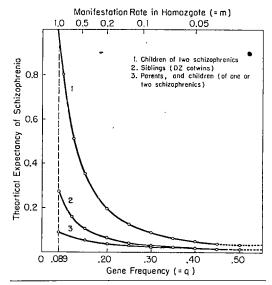
Formulae for the theoretical expectancies of schizophrenia in relatives of schizophrenics are listed in Table 3, and those for parents, children and siblings are depicted graphically in Figure 1 (according to gene frequency and rate of manifestation). It may be noted that expectancies for siblings are higher than those for parents and children (of one or two schizophrenics) for all values of m and q, the latter being contrary to recorded findings (Table 2).

Hypothesis B. Partial dominance with complete manifestation in homozygote but incomplete manifestation (m) in heterozygote. (Table 4, Figure 2).

Two of the 4 phenotypes will be normal  $(AA, Aa_o)$  and the other two schizophrenic  $(Aa_m, aa)$ . Phenotypic frequencies in the population will be  $p^2$  (AA): (1-m)2pq  $(Aa_o)$ : 2mpq  $(Aa_m)$ :  $q^2$  (aa).

This was the third hypothesis examined by Böök in generating theoretical expectancies for different classes of siblings, and the one with which he considered his data corresponded most closely. However, attention may be drawn to what appears to be a minor error in Table 39 on page 89 of his

 $\label{eq:Fig.1} \textbf{Fig. 1}$  Theoretical Expectancies of Schizophrenia under Hypothesis A



article. It is suggested that the expected frequency of affected children from his fifth type of mating ( $DR_m \ X \ DR_m$ ) should be  $d^2r^2p^2 + 2 \ d^2r^2p^3$  (the final exponent

TABLE 3

THEORETICAL EXPECTANCIES OF SCHIZOPHRENIA UNDER HYPOTHESIS A:

MONOHYBRID AUTOSOMAL RECESSIVITY, WITH INCOMPLETE MANIFESTATION
IN HOMOZYGOUS INDIVIDUALS

Category	Theoretical Expectancy of Schizophrenia(a)
General population Children of first cousins	$mq^2 = s \approx 0.008$ $f_6 (mq+15s)$
'Relatives of schizophrenics (b)	
$\begin{cases} \text{Parents, and} \\ \text{Children} \end{cases} $	$igg\} \ \mathrm{mq}$
Children of $two$ schizophrenics	m
Full siblings, and DZ cotwins	$\left. \begin{array}{c} \frac{\mathbf{m}_{\bullet}}{(2-\mathbf{q})^2} = \mathbf{E} \end{array} \right.$
MZ cotwins	Not less than m
Half siblings	%(E + s)
First cousins	%(mq + 3s)

<sup>(</sup>a) Where s is the frequency of schizophrenia in the general population (≈0.008), q is the frequency of the fine assumed responsible for schizophrenia, and m is the manifestation rate of schizophrenia in persons homozygous for this gene.

<sup>(</sup>b) Ascertained through affected individuals.

<sup>(</sup>c) Children of either one or two schizophrenics.

being 3 instead of 2). When this correction is made, the total affected children from all matings reduces to the anticipated value of  $d^2 + 2dp(1-d)$ , which is simply the expectancy of schizophrenia in the general population (according to Böök's notation).

Although formulae obtained by this method are equivalent to those derived by Slater (38) under the same hypothesis, the latter author used a simplified approach on which Table 4 and Figure 2 have been based. In these theoretical expectancies, h is the proportion of schizophrenics who would be homozygous, given a certain manifestation rate and associated gene frequency. In the symbols of the present study h=q²/(q²+2mpq)=q²/s=q²/0.008.

Slater cited several recorded frequencies in children and siblings of schizophrenics, that roughly corresponded with theoretical expectancies (under this hypothesis) asso-

Fig. 2

Theoretical Expectancies of Schizophrenia under Hypothesis B • (modified after Stater, 1958)

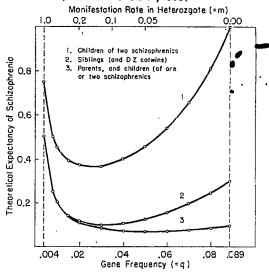


TABLE 4

Theoretical Expectancies of Schizophrenia Under Hypothesis B:
Monohybrid Autosomal Dominance With Complete
Homozygous Manifestation, but Incomplete Manifestation
in Heterozygous Persons

Category	Theoretical Expectancy of Schizophrenia(4, b)
General population Children of first cousins	$\frac{q^2 + 2 \operatorname{mq}(1-q) = s \cong 0.008}{r_{0}(q+15s)}$
Relatives of schizophrenics (c)	
Parents, and Children (d)	$\bigg\} \% (1+h) (m+q)-hmq \qquad .$
Children of <i>two</i> schizophrenics	$\frac{1}{2}(1+h)\left\{2m(1-h)+1+h\right\}$
Full siblings, and DZ cotwins	$\left. \left\{ 2m + h + q(2m + h + 1 - 2mh) + q^2(1 - 2m) \right\} = E$
MZ cotwins	Not less than $h + m(1-h)$
Half siblings	½(E + s)
First cousins	

<sup>(</sup>a) Where s is the frequency of schizophrenia in the general population (≈0.008), q is the frequency of the gene assumed responsible for schizophrenia, m is the manifestation rate of schizophrenia in persons heterozygous for this gene, and h is the proportion of schizophrenics who are homozygous (=q²/s).

(b) The first five formulae correspond with those derived by Slater (1958) under this hypothesis.

<sup>(</sup>c) Ascertained through affected individuals.

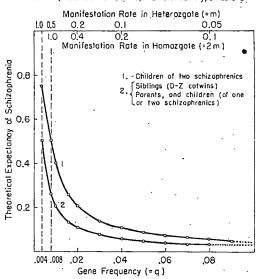
<sup>(</sup>d) Children of either one or two schizophrenics.

ciated with a heterozygous manifestation rate of about 0.26 and a gene frequency of about 0.015. However, he found it necessary to ignore recorded frequencies in parents on the grounds that they are "a group of persons who have been selected for survival and for health"-as indeed are all propositi and relatives who have lived longe enough to develop a schizophrenic psychosis. It may also be of interest to note that under these conditions of manifestation and gene frequency, only 3% of schizophrenics would be homozygous, and over 70% of those having the gene assumed responsible for schizophrenia would fail to manifest the disease-which might be attributable to the influence of other modifying genes or to environmental factors or both.

Hypothesis C. Partial dominance with ho-

Fig. 3

Theoretical Expectancies of Schizophrenia under Hypothesis C



#### TABLE 5

Theoretical Expectancies of Schizophrenia Under Hypothesis C: Monohybrid Autosomal Partial Dominance, With Manifestation Rate in Homozygotes Double That in Heterozygous Individuals

Category	Theoretical Expectancy of Schizophrenia <sup>(a)</sup>
General population Children of first cousins	$ 2mq = s \approx 0.008 $ s
Relatives of schizophrenics (b)	
Parents, and Children (c)	$\left. \left. \right  \right\}$ ½m(1 + 3q)
Children of <i>two</i> schizophrenics	m(1+q)
Full siblings, and DZ cotwins	$\left. \right\} \frac{m(1+q^3) + s(2-q)}{2 + q(1-q)} = E$
MZ cotwins	Not less than $m(1+q)$
Half sillings	发(E + s)
First cousins	$\frac{1}{2}$ %m(1 + 17q + 7q <sup>2</sup> -q <sup>3</sup> )

<sup>(</sup>a) Where s is the frequency of schizophrenia in the general population ( $\cong 0.008$ ), q is the frequency of the gate assumed responsible for schizophrenia,  $m(\le 0.5)$  is the manifestation rate of schizophrenia in persons heterozygous for this gene, and  $2m(\le 1.0)$  is the manifestation rate in homozygous individuals.

<sup>(</sup>b) Ascertained through affected individuals.

<sup>(</sup>c) Children of either one or two schizophrenics.

mozygous manifestation rate  $(2m \le 1..0)$  double that of heterozygous rate of manifestation  $(m \le 0.5)$ . (Table 5, Figure 3.)

The second of Böök's three hypotheses concerned the assumption of equal penetrance in both homozygote and heterozygote. This possibility appears much less likely than that of the assumptions just considered under hypothesis B. However, another plausible hypothesis would appear to be that of penetrance (and/or expressivity) proportional to the number of pathological genes present, and this situation will now be examined.

Five phenotypes must be considered, three of which will be normal (AA, Aa<sub>o</sub>, aa<sub>o</sub>) and two schizophrenic (Aa<sub>m</sub>, aa<sub>m</sub>). The phenotypic frequencies in the population (for  $m \le 0.5$ ) will be  $p^2$  (AA): (1-m)2pq (Aa<sub>o</sub>): 2mpq (Aa<sub>m</sub>):  $1-2m)q^2$  (aa<sub>o</sub>):  $2mq^2$  (aa<sub>m</sub>).

The proportion of schizophrenics that are homozygous will in this case be equal to the gene frequency (q), and it is quite convenient to derive theoretical expectancies by means of Böök's method of exhaustive enumeration. The types of mating (from which affected offspring arise) are in fact identical with those listed in table 38 on page 88 of his article, but the expected frequencies of most matings and affected children are somewhat different.

Theoretical expectancies in relatives are recorded in Table 5, and those for parents, children and siblings depicted graphically in Figure 3. In this instance, the expectancies in siblings are not appreciably different from those in parents or children for all rates of manifestation (as is the case under hypothesis B for relatively high rates of manifestation and low gene frequencies). However, the lower expectancies in the children of two schizophrenic parents under hypothesis C result in a poorer fit with observed frequencies than that obtained under hypothesis B and discussed above.

### CONSANGUINITY, HARDY-WEINBERG EQUILIBRIUM, ASSORTATIVE MATING, MORTALITY, FERTILITY AND MUTATION

It was mentioned previously that Kallmann has cited a high rate (5%) of consanguinity (unspecified) between parents of schizophrenics in support of his hypothesis of recessivity—and that Böök has pointed out this would not be expected in ... a genetic trait with a frequency of nearly one percent. Assuming the minimum gene frequency (under the hypothesis of recessivity) to be 0.089, the application of Lenz's formula (18) indicates that in fact the expected frequency of first-cousin marriage would be no higher than that in the general population (which is about 1%). Slater (38) has also found the expectation of schizophrenia in the children of first cousins an insensitive measure of dominance-recessivity under hypothesis B (and this expectation is the same as that in the general population under hypothesis C.).

The theoretical expectancies presented in the previous section are all based on the assumption that the conditions for the *Hardy-Weinberg equilibrium* are satisfied, these conditions being as follows (28):

- 1. No tendency for like genotypes to mate *i.e.*, random mating), and all matings equally fertile.
- 2. The absence of selection for or against any of the genotypes involved.
- 3. Stability of the gene (i.e., no mutation).
  - 4. Non-overlapping generations.
  - 5. An infinitely large population.

However, there is evidence suggesting that the first 3 of these criteria are violated in the case of schizophrenia. Thus, it has been established that people tend to select mates of similar intelligence, and there is reason to suspect assortative mating in persons predisposed to certain forms of mental disorder, including schizophrenia (15, 29).

Moreover, schizophrenics are subject to strong negative selection on account of both high mortality and low fertility. The mortality some years ago was estimated as from two to three times that of the corresponding general population (1, 9, 26). Data from several further investigations indicate that the reproductive fitness of schizophrenics is not greater than 0.70 (2, 4, 5, 9), due mainly to selection against marriage of schizophrenic males, but also in at least one study to diminished fertility of married schizophrenic females.

In view of the evident selection against schizophrenia, there are three possible explanations of its apparently undiminished prevalence (24).

- 1. It is not, or some varieties of it are not, hereditary.
- 2. Outwardly healthy carriers of pathological genes might reproduce at a higher rate than normal—a possibility that seems to have been excluded by studies on the fertility of siblings of schizophrenics (9, 19).
- 3. The pool of pathological genes might be constantly augmented by means of mutation. Böök estimated the mutation rate in his North Swedish isolate as 5 x 10<sup>-3</sup> (or 1 in 200) genes per generation. Estimates of a similar high order of magnitude have been considered generally applicable by other authorities (33), and would be required by the monohybrid hypotheses examined earlier.

#### ALTERNATIVE HYPOTHESES

Several leading geneticists have remarked on the impossibility of forcing the data on schizophrenia into a simple Mendelian pattern of inheritance (30, 37). The present writer is now convinced that, even when modified by various degrees of penetrance and expressivity, no monogenic hypothesis is compatible with all the data recorded.

Three alternative hypotheses (that are not mutually exclusive) may be considered briefly:

- 1. That schizophrenia is predominantly determined by environmental influences. There is much more theory than fact relating to this proposition, but a number of studies have been made of such objective data as parental ages, permanent loss of parents, family size, birth order, ordinal position and sex of siblings (12, 13, 14).
- 2. That the genetic component of the schizophrenic syndrome is heterogeneous, and includes two or more types, each transmitted by different genetic mechanisms (37). In view of the difficulties in the genetic analysis of schizophrenia, detailed evidence in support of this hypothesis is lacking at the present time, but some interesting data have recently been presented (43).

S. That at least part of the genetic component of schizophrenia is polygenic in nature. In this connection, several associations appear to exist between schizophrenia and presumed polygenic systems such as genetic determinants of intelligence, resistance to bodily disease, and somatotype.

It is recognized that individual patients with schizophrenia may have very superior intelligence, and also that the disease itself is apt to be accompanied by marked deterioration in intellectual function. However, Terman(40) has shown an association between high childhood intelligence and low adult rates of mental illness (and also mortality). Dewan(6) has demonstrated an association between intellectual performance at induction, and subsequent psychiatric discharge from the Canadian army. Larsson and Sjögren(23) have reported an unduly high frequency of concurrent oligophrenia and schizophrenia, and discussed the possibility of a genetic connection between these disorders.

Since intelligence is also related to socioeconomic status (40), such a connection between schizophrenia and intelligence would be quite compatible with studies indicating the frequency of schizophrenia to be inversely related to social class (17). The increased mortality of mothers during the early childhood of schizophrenics may also be associated with the latter relationship to social class (13, 14).

Attention has already been drawn to the relatively high mortality recorded in patients with schizophrenia. This may be at least partly related to impaired resistance to tuberculosis (22) and deficient immune responses to other infections (7, 41). Evidence of some association with somatotype is extensive, but controversial (22).

In discussing the testing of complex data for agreement with a simple genetic hypothesis, Neel and Schull point out that there are diseases with a hereditary element in whose study one may encounter several simultaneous statistical problems, such as incomplete penetrance, a variable age of onset, and an uncertain degree of ascertainment (and at the same time also genetic heterogeneity). They conclude that there are times when the proper genetic analysis of a given disease must await certain medical advances, and that the student of human genetics should become familiar

with the limitations of his approach and the data with which he works.

Penrose(30) has enumerated the principles of investigation to be applied to the particular problem of the genetics of mental disorder, and has rightly concluded that until these things are done on a large scale most of our theories about inheritance of psychoses will remain in the realm of speculation.

### - SUMMARY

It is generally accepted that intelligence in the general population, and high-grade mental deficiency, are largely determined by the cumulative effects of polygenes. Simple Mendelian inheritance is well established as causative of certain forms of (usually) low-grade mental deficiency, and other degenerations involving the central nervous system, including Huntington's chorea.

There is still considerable doubt concerning the significance of genetic factors in the etiology of "functional" psychiatric disorders. Schizophrenia has been extensively studied by means of twin and family data, but the extent and nature of possible genetic factors in this syndrome remain uncertain.

Twin studies suggest that heredity may be slightly more important in predisposing to schizophrenia than in determining intelligence, but these studies are complicated by very serious methodological difficulties, some of which have been discussed.

The frequency of schizophrenia is significantly greater in families of schizophrenics than in the general population, but observed frequencies in different classes of relatives do not conform with those expected on the basis of simple Mendelian dominance or recessivity.

Expected frequencies in various classes of relatives have been examined under each of three hypotheses involving incomplete penetrance and/or expressivity (in homozygote and/or heterozygote). Data on consanguinity, assortative mating, mortality and fertility have been outlined.

It has been concluded that no monogenic hypothesis is compatible with all the data recorded, and three alternatives (that are not mutually exclusive) have been briefly considered: 1. Predominantly environmental causation, 2. Genetic heterogeneity, 3. Polygenic inheritance.

Statistical associations between schizophrenia and limited intelligence inferior socio-economic status, maternal mortality, and immunological or other somatic corracteristics of schizophrenics, are all compatible with the latter hypotheses.

The data recorded on schizophrenia are complex and do not conform with any simple genetic hypothesis. Pending the results of considerable further investigation, theories concerning the role of possible genetic factors in the development of schizophrenia and other "functional" psychiatric disorders will remain in the realm of speculation.

### **BIBLIOGRAPHY**

- Alström, C. H.: Acta psychiat., Suppl., 24: 1942.
- 2. Böök, J. A.: Acta genet., 4: 1, 130 and 345, 1953.
  - 3. Burt, C.: Eugen. Rev., 49: 137, 1957.
- 4. Dahlberg, G.: Z. ges. Neurol. Psychiat., 144: 427, 1933.
- 5. Dayton, N. A.: Stud. Quant. Cult. Sociol., 24: 123, 1930.
- Dewan, J. G.: Am. J. Psychiat., 104: 548, 1948.
- 7. Doust, J. W. L.: Brit. J. Soc. Med 6: 64, 1952.
- 8. Elsässer, G.: Die Nachkommen geistenkranken Elternpaare, Stuttgart: Thieme, 1952.
- 9. Essen-Möller, E.: Acta psychiat. Suppl. 8, 1935.
- 10. : Psychiatrische Untersuchungen an einer Serie von Zwillingen. Copenhagen: E. Munksgaard, 1941.
- 11. Fremming, K. H.: The expectation of mental infirmity in a sample of the Danish population, Occasional Papers on Eugenics, No. 7. London: Cassell & Co., 1951, p. 25.
- 12. Gregory, I.: Brit. J. prev. soc. Med., 12: 42, 1958.
- 13. \_\_\_\_\_: Am. J. Psychiat., 115: 432, 1958.
  - 14. \_\_\_\_\_: Acta genet., 9: 54, 1959.
- Mental Disorder. New York: Milbank Memorial Fund, pp. 42-3, 4950.
- 17. Hollingshead, A. B., and Redlich, F.C.: Social Class and Mental Illness. New York: Wiley, 1958.

- 18. Jervis, G. A.: In Genetics and the Inheritance of Integrated Neurological and Psychiatric Patterns, Res. Publ. Assoc. Nerv. Ment. Dis., 33: 275. 1954.
  - 19. Kallmann, F. J.: The Genetics of Schizophrenia. New York: J. J. Augustin, 1938.

20. \_\_\_\_\_: Am. J. Psychiat., 103: 309, 1946.

- 21. \_\_\_\_\_: The genetics of psychoses. In Congrès International de Psychiatrie Paris 1950. VI. Psychiatrie Sociale. Hermann & Cie, p. 1, 1950.
- 22. : Heredity in Health and Mental Disorder. New York: Norton, pp. 143-181, pp. 56-60, 1953.
- 23. Larsson, T., and Sjogren, T.: Acta Psychiat., Suppl. 89, 138, 1954.
  - 24. Lewis, A.: Eugen. Rev., 50: 2, 1958.
- 25. Luxenburger, H.: Z. ges. Neurol. Psychiat., **56**: 145, 1930.
- 26. Malzberg, B.: Mortality among patients with mental disease. Utica, New York: State Hospital Press, 1934.
- 27. Muller, H. J.: Am. J. Psychiat., 113: 481, 1956.
- 28. Neel, J. V., and Schull, W. J.: Human Heredity. Univ. of Chicago Press, 1954, pp. 70, 228 and 261-282.
- 29. Penrose, L. S.: Psychiat. Quart. Suppl., 18: 161, 1944.
- 30. \_\_\_\_\_: Research methods in human genetics. In Congrès International de Psychiatrie Paris 1950. VI. Psychiatrie Sociale. Hermann & Cie, 1950, p. 41.

- 31. Reed, T. E., and Chandler, J. H.: Am. J. Hum. Genet., 10: 201, 1958.
- 32. \_\_\_\_ and Neel, J. V.: Am. J. Hum. Genet., 11: 107, 1959.
- 33. Roberts, J. A. F.: The genetics of oligophrenia. *In* Congrès International de Psychiatrie Paris 1950. VI. Psychiatrie Sociale. Hermann & Cie., 1950, p. 55 on.
- 34. Rosanoff, A. J., et al.: Am. J. Psychiat., 91: 247, 1934.
- 35. Schulz, B., and Leonhard, K.: Arch. Neurol. u. Psychiat., 168: 587, 1940.
- 36. Schut, J. W.: In Genetics and the Inheritance of Integrated Neurological and Psychiatric Patterns, Res. Publ. Assoc. Nerv. Ment. Dis., 33: 293, 1954.
- 37. Sjögren, T.: The genetics of schizophrenia. *In* 2nd International Congress for Psychiatry, Zurich 1957, Synopses, p. 129.
- 38. Slater, E.: Psychotic and Neurotic Illnesses in Twins, Med. Res. Coun. Spec. Rep. Ser., No. 278, 1953. London: H.M.S.O.
  - 39. \_\_\_\_\_: Acta genet., 8: 50, 1958.
- 40. Terman, L. M.: Science, 92: 293, 1940.
- 41. Vaughan, W. T., Jr., Sullivan, J. C., and Elmadjian, F.: Psychosom. Med., 11: 327, 1949.
- 42. Walker, N. F., and Reid, D. B. W.: Psychotic and neurotic illnesses in twins (Book Review), Am. J. Psychiat., 111: 633, 1955.
- 43. Rosenthal, D.: J. Nerv. & Ment. Dis., 129: 1, 1959.

### EVALUATION OF TRANQUILIZING DRUGS IN THE MANAGEMENT OF ACUTE MENTAL DISTURBANCE <sup>1</sup>

D. WILFRED ABSE, M.D., W. G. DAHLSTROM, Ph.D. AND A. G. TOLLEY, M.D. <sup>2</sup>

In 1956, a preliminary report of the present research project 3 was published(1) based on a small group of 36 subjects studied over the period of a week. Each patient in the study was felt to be in need of day-time sedation because of excessive tension, anxiety or emotional disturbance causing severe personal discomfort or difficulties in ward management while hospitalized for short-term intensive psychiatric treatment. Each was assigned to one treatment (reserpine, powdered opium, or placebo) on a random basis and given a fixed dosage without the patient or staff knowing the drug being administered. All medication was dispensed in equal numbers of identical capsules such that patients received 2 capsules 4 times daily for the first 2 days and then 1 capsule q.i.d. for the remainder of the medication period. This provided a total daily dose of reservine of 8 mg. for the first 2 days, then 4 mg. daily and for powdered opium 400 mg. the first 2 days, then 200 mg. daily. Lactose was dispensed in equal numbers of capsules. Data from daily nursing checklists, psychiatric ratings and checklists and psychological testing were reported, most of which suggested that the patients were all improving during the period of observation without any one treatment showing any clear advantage over the others. That is, for this group of acutely disturbed patients, reserpine did not appear to show any special benefit not obtained by standard ward care and the semblance of medication. Several questions were obviously left open in the previous report: the dosage chosen may well have been on the average too low to be physiologically effective for this kind of patient; the period of time may not have been sufficient to allow the tranquilizer to reach optimal effectiveness; reserpine may be inferior to other tranquilizing agents for the management of these disorders. The present report offers additional evidence on each of these ques-

Since the initial report, a total of 68 patients have been studied in the reserpine series and a second series involving 30 patients added to the project comparing chlorpromazine with the standard drug (powdered opium) and the inert placebo (lactose). The dosage level for chlorpromazine was set at 600 mg. for the first 2 days and then 300 mg. daily. In addition it has been possible to study some of the cases over a longer interval than a week. The same evaluative procedures, cautions for patient safety and secrecy concerning the drug used, and objectivity in assessing the changes noted have been adhered to in these subsequent procedures.

TABLE 1

MEAN BLOOD PRESSURE READINGS BEFORE AND AT TWO DAY INTERVALS AFTER MEDICATION. (SIX CASES IN EACH GROUP.)

	CHLORPR	COMAZINE	RESEI	RPINE	POWDER	ED OPIUM	PLA	CEBO
Time	Syst.	Diastol.	Syst.	Diastol.	Syst.	Diastol.	Syst.	Diastol.
Initial	132.7	85.3	139.8	88.8	118.0	72.7 •	140.3	88.0 83.3.
3rd day	118.7	75.3	120.7	77.3	113.3	70.0	134.0	83.3.
5th day	116.7	75.3	112.0	69.3	118.3	71.2	130.0	78.0
7th day	110.7	69.3	116.0	72.7	113.3	70.0	118.7	<b>75.3</b>

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Department of Psychiatry, University of North Carolina, Chapel Hill, N. C.

<sup>&</sup>lt;sup>3</sup> This study was carried out under U.S.P.H. Grant Number MY-1870.

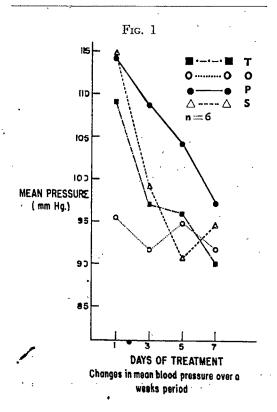
### PHYSIOLOGICAL MEASURES

In Table 1 and Figure 1 are provided the mean values of blood pressure recording made initially and on alternate days during the first week of medication. Analyses of variance of the systolic and diastolic pressure values over this interval indicates that, for both indices, the time changes were larger than chance, and that the diastolic readings showed an interaction with the drug being administered. The

TABLE 2

MEAN NUMBER OF PIECES PLACED OR ASSEMBLED ON THE PURDUE PEGBOARD BY CASES IN THE RESERPINE AND PLACEBO GROUPS PRIOR TO MEDICATION AND AFTER A MONTH'S TREATMENT. (FIVE CASES IN EACH GROUP.)

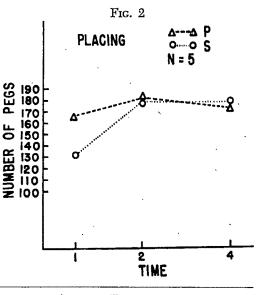
	RES	ERPINE	$PL_{x}$	ACEBO
Time	RLB	Assembly	RLB	Assembly
Initial	133.8	17.8	168.0	21.1
1st Week	180.6	19.0	182.4	25.8
4th Week	180.6	17.7	175.2	27.2

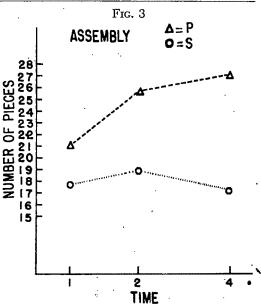


reserpine group showed the most rapid—. drop in mean blood pressure.

#### PSYCHOMOTOR PERFORMANCE

Support for some systemic effect of the tranquilizing drug at the chosen level also comes from the performance of the reserpine group on the Purdue Pegboard. It was previously noted that this group failed to show the expected increase in proficiency over a week's interval on the assembling sub-test in which several small pieces must be put together in a prescribed order. The





reserpine group shows normal performance on a simple placing test based on the right hand, left hand, and two handed performance combined (RLB) but fails to improve on the assembly task even over the period of a month's time (Table 2, Figures 2 and 3).

### TABLE 3

MEAN NUMBER OF ADVERSE BEHAVIORAL ITEMS NOTED BY THE NURSING STAFF ON A STANDARD CHECKLIST FOR EACH OF THE TREATMENT GROUPS DURING THREE WEEKS OF MEDICATION. (SEVEN CASES IN EACH GROUP.)

Interval (days)	Chlorpromazine	Reserpine	Powdered Opium	Placebo
1-3	72.4	63.1	82.4	71.4
4-6	68.6	50.2	75.1	64.9
7-9	44.6	33.9	47.4	54.9
10-12	33.9	26.4	30.7	50.0
13-15	30.4	27.3	30.0	45.6
16-18	28.9	24.4	23.3	27.9
19-21	25.6	28.7	21.6	45.7

### TABLE 4

MEAN NUMBER OF ANXIETY ITEMS CHECKED BY THE PSYCHIATRIC RESIDENT FOR EACH TREATMENT GROUP INITIALLY AND AFTER A WEEK OF MEDICATION

m:	D	n	Placebo
Time	Reserpine	Powdered Opium	Piacebo
Initial	7.0	8.2	6.0
1st Wee	ek 4.3	5.7	3.5

#### STAFF RATINGS

Over a week's time the observations of . • the nursing staff as recorded on a checklist (Figure 4) that they completed 3 times a day were previously found to show consistent improvement for all groups but no special interaction with the specific medication was found. There was some suggestion that the drug condition was beginning •to show some advantage at the end of this period, however, warranting continued observation. Table 3 and Figure 5 show comparable findings for a 3-week period of observation. Again it can be seen that the groups all show a consistent and gratifying decrease in psychiatrically adverse behavior but no one group shows any special change either in magnitude or rate of change. The same general findings were obtained on the mental status and anxiety ratings made by the psychiatric staff in charge of these cases. Figure 6 shows the anxiety rating sheet used by the psychiatric residents. Table 4 and Figure 7 summarize the number of items rated prior to and after a week of treatment. No drug effect was found to be significant.

### PERSONALITY TEST FINDINGS

The difficulties in administering the personality test at the start of the treatment to the more disturbed cases assigned to the project have made it necessary to limit the report to a small group of cases given reserpine and a corresponding group given the inert placebo. Table 5 shows the mean scores on each of the scales in the basic MMPI profile and the ego strength scale devised by Barron(2). Contrary to a number of studies on the changes on the MMPI

. TABLE 5

MEAN SCORES ON THE MMPI FOR RESERPINE AND PLACEBO GROUPS PEIOR
TO MEDICATION AND AFTER ONE WEEK OF TREATMENT. (10 CASES EACH GROUP.)

Group						Scal	es					•		
Reserpine:	L	F	K	. Hs	D	Ну	Pd	Mf	Pa	Pt	Sc	Ma	Sj	Es
Initial 1 week	54 57	63 74	54 50	67 69	78 73	73 71	69 73	49 55	67 80	71 73	73 •80	56 62	5 <del>3</del> )	26 38
Placebo: • Initial 1 week	56 54	59 62	54 56	65 65	76 76	67 71	59 62	55 55	61 64	68 71	66 69	55 54	55 59	17 19

on retesting as reported by Windle(3), the cases in this study show a rise in pathological scores rather than the expected decline. The reserpine group showed the largest absolute shifts but the differences achieved statistical stability only for the hysteria and paranoia scales. The ego strength scale showed changes in the direction of greater

readiness for psychotherapy for both groups, the reserpine group showing a statistically reliable advantage over the placebo group. These findings seem to show that there is a shift from regressive disintegration towards a restitutional effort characterized by externalization and by defenses of a more synthetic order.

Fig	. 4
Project No	Patient
Observer	DateShift
A NEW CHECKLIST OF BEHAVIORAL OB	SERVATIONS BY PSYCHIATRIC NURSES
Complete this form on each patient (+) opposite each item characteristic of observation. Place a (++) opposite each degree. Note in the routine nursing not the behavior checked in this list.	h item which is present in extreme
BEHAVIOR AND MANNERISMS:  posturing bodily rigidity talkative and voluble perspiring excessively grimacing incoherent in conversation hallucinating or appears to be talking to himself bewildered and perplexed restless and fidgeting tremors mute circumstantial in conversation tics masturbating untidy picking and rubbing body parts incontinent pacing floor hyperactive  MOOD:  apathetic sulking euphoric irritable depressed anxious brooding and preoccupied hostile calm cheerful pleasant	MENTAL CONTENT:  feelings of guilt feelings of unworthiness feelings of influence apprehensive fear of loss of control physical complaints talking of suicide disoriented confused delusions  RELATIONS WITH STAFF: resentful of staff requests tube feeding required poor self care suspicious and distrusting negativistic and resistent demanding complains about ward and routine over -submissive to suggestions misidentifies personnel friendly and responsive quiet but responds on approach  RELATIONS WITH PATIENTS: socially incommunicative usually alone bullying others dominating seeks contacts freely insecure actively participates with group
spontaneous CONTROL:	Pertinent comments: Received EST
performs many irrational acts loud and noisy swearing and cursing destructive	Seventh day of Medication  Refused medication at Other sedation given
destructive assaultive or combative impulsive	Sleeping pattern Seclusion necessary Other



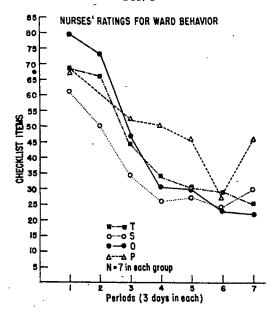


Fig. 8

### The Minnesota Multiphasic Personality Inventory Starks R. Hathaway and I. Chamley McKinley

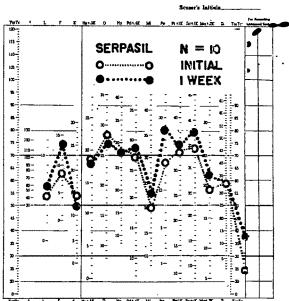
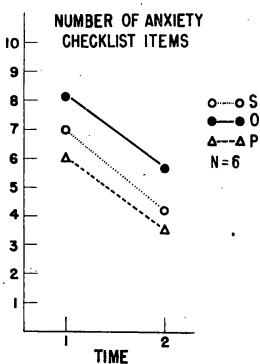


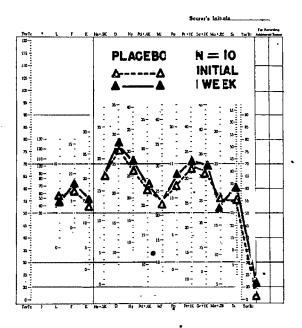
Fig. 7



Mean number of items checked by psychiatric residents

FIG. 9

The Minnesota Multiphasic Personality Inventory
Starte R. Hathaway and J. Charaley McKinley



### Fig. 6

### Rating Scale of Anxiety

Subj	ect	*	Rater:	
ota.	1 <b>t</b>	ime patient observed:	Date:	
•		INSTE	UCTIONS	
•				
Chec	k (	) for absence of the sign. +) for presence of the sign. ++) if sign is present and is	severe.	
L.	0ve	rt signs of tension or anxiety	:	
i	a.	RESTLESSNESS (e.g., shifting	in chair, fidgety)	
	b.	IRRITABILITY (e.g., hostile r	eaction to frustration	
	c.	SPEECH DISTURBANCE (e.g., hal	ting, blocking, pressure	
	đ.	TREMORS (e.g., shaking of han	, excited speech)	
	е.	COLD SWEATING HANDS OR FOREHE		
	f.	STARTLE REACTION (e.g., sudde	n motor reaction to	
		incidental	or abrupt stimuli)	
	g.	HAND AND FINGER MANIPULATIONS	(e.g., of objects,	
,	h	TWDATER COMCENSES AND AND	wringing of hands)	
1	h.	IMPAIRED CONCENTRATION OR ATT	prehend simple statements,	
			s interviewer to repeat	
			tements, preoccupied)	
:	1.			
		into objec		
	j.	HYPERSENSITIVENESS (e.g., ove	on, to slight verbal	
		criticism		
,	_	•	•	·
1	ń	OTHER		
				<del></del>
2. (	Gene	eral estimate of degree of ove	rt anxiety.	
•				
		-32 -1	0 +1 +2	+3
· .		7.00		(0.00
			mal adult ividual in	(Overt
or c			s situation)	panic state
	OTTA	,	o or ore orest	8 66 68

### DISCUSSION

In the light of the physiological and psychomotor changes noted with the administration of reserpine and chlorpromazine it does not seem possible to discuss the cliracal findings on the basis of ineffective levels of medication. No undesirable side-effects have been noted with this level of medication, nor have the patients in any of the groups expressed any dependence upon medication.

We have retained our usual psychotherapeutic endeavors when a patient is in need of a sedative including the usual "milieu therapy" which obtains on our psychiatric wards. In other words, the drugs have been introduced into a therapeutic setting which is not constricted because of their exhibition. Besides inert placebo, an active placebo is also introduced into the design for the following reasons: if on a particular psychiatric unit some patients are placed on placebo and other patients on the active drug, the doctors and nurses may pick up cues sufficient to indicate an active drug rather than an inert placebo. The patient may also pick up some change in his internal milieu which he communicates to his attendants. Through suggestion, a relatively non-specific effect can be amplified by the expectant attitudes and feelings of those in the therapeutic team. It enhances the efficacy of the design if these tranquilizing drugs are also compared with an active placebo which simulates some of the sedative effects.

Tested in this way in this psychiatric setting, the drugs used do not yield any more rapid therapeutic gains, or more desirable patterns of mental, emotional or behavioral changes than those achieved by existing treatment procedures. Our continued evaluation of these tranquilizing drugs in the management of acute mental disturbance on our inpatient service in an atmosphere which avoids irrational enthusiasm as much as unreasonable insistence on drugless healing thus reaches the sombre conclusion that there is improvement in all groups with no special interaction with the specific medication to be found; although there are some other details not directly related to immediate clinical improvement.

### BIBLIOGRAPHY

1. Abse, D. W., Curtis, T. E., Dahlstrom, W. G., Hawkins, D. R., and Toops, T. C.: J. Nerv. and Ment. Dis., 124: 239, 1956.

2. Barron, F.: An Ego-strength Scale Which Predicts Response to Psychotherapy. In Welsh, G. S., and Dahlstrom, W. G: Basic Readings on the MMPI in Psychology and Medicine. Minneapolis: University of Minnesota Press, 1956.

3. Windle, C.: Educ. Psychol. Meas.nt., 14: 617, 1954.

### DISCUSSION

T. R. Robie, M.D. (Orange, N. J.).—It is research such as this study by Doctors Abse, Dahlstrom and Tolley which makes science what it is, namely, the relentless search for the truth. We should feel deeply indebted to them for calling these astonishing findings to our attention.

Since my own astonishment over the fact that placebo therapy (according to the authors) was equally efficacious in comparison with chemotherapeutic agents known to be sedative or tranquilizing to many thousands of patients, according to the published reports of hundreds of investigators, and in my own experience, I was intrigued with the prospect of discovering if possible what the artefact is in this report. I have leaned heavily upon our colleagues who were intimately associated with the early research on reserpine and chlorpromazine. The comments will be a distillate of many short discussions of this sort and a single most significant reference to Nathar Kline's earliest paper on reserpine.

This short period of observation thwarts the recording of the very best results that are to be anticipated from reserpine—for all those who have conducted research on this tranquilizer have pointed out that one must expect a period of turbulence during the first and second weeks of treatment before the real tranquilizing effects can be expected. Thereafter, however, the continued good effects may be expected. Also, those who follow their patients for long periods describe even better tranquil effects in the second to fourth months, and even for longer more sustained periods.

As far back as 1933 Chopra and Gapta noted that it was common practice in B.har, India, to put children to sleep with Rauwolfia. It was called "pagla-ka-dacra" meaning "insanity herb" at the bazaars where it was sold. These authors then commented "on account of its cerebral depressant properties, the alkaloid should prove to be a valuable sedative drug." Their prediction was apply verified by the great flood of unscientific papers sparked by those of Kline, Crane, Sainz, Barsa and many others which filled our psychiatric journals and the Saturday Evening Post from 1954 on.

We had never before possessed a drug capable of calming schizophrenia as did this remarkable snake root alkaloid, or of reducing hypertensive blood pressure to normotensive levels.

Very soon thereafter chlorpromazine, a drug synthesized in France, was found to possess almost identical therapeutic effectiveness. Certainly it is common knowledge that these two drugs are effective in sedating psychotic disorders and that they do have hypotensive properties when used in effective dosage. Therefore, it would seem unlikely that many psychiatrists will be dissuaded from using these tranquilizing chemicals by this report that seems to show that a placebo has equally effective tranquilizing properties.

Thus one is confronted with the question: Where is the artefact in the study presented by Drs. Abse, Dahlstrom and Tolley? It is my belief that the artefact is the surprisingly short period of observation—one week only.

In Nathan Kline's objective studies reported in 1954, 4 physicians and 4 nurses took blood pressures on all patients in a ward on 4 separate occasions one month apart. First values were obtained immediately pretest and the last immediate post test, and patient behavior was recorded by ward personnel from the end of the first month on.

It was learned from these studies on ward psychiatric patients that significant blood pressure recession occurred in response to Serpasil, namely: from 127/76 down to 118/68 (mean blood pressure)

Raudixin down to 117/68. The recession - caused by placebo was less in these longer observed cases than found in Abse's study, i.e. from 127/76 down to 121/74—only 6 points in contrast to the 22 points lower in Abse's study.

The only satisfactory explanation suggested for the significant drop in blood pressure demonstrated in the placebo treated cases, is the effect of "total push," namely the increased attention given to all patients, placebo cases included, by nurses' observations, extensive psychological testing, etc. plus the administration of a supposed specific medication. One must admit it is difficult to see why such a drop as 22 points occurred; therefore, we must ask, would these same findings show up one month or two months or four months later on the same regime?

It is reasonable to suppose that more consistent tranquilization would be found in those receiving specific therapy for the longer period.

### REPLY

D. W. Abse, M.D.-Dr. Robie's chief criticism of our report is the short period of observation. It should be clear from the findings reported that some of our parameters extend over a three week period. We are also engaged in work in a state hospital setting which will enable us to extend our period of rigorous observation very considerably. Even so, the point we wish to make is that in acute disturbances our findings suggest that the inert placebo as well as the standard sedative lead to effective tranquilizaton, not distinguishable from the action of the tranquilizers. Dr. Robie indicates that there is a delayed action in terms of the tranquilization from reserpine. If this is so, our work indicates that there is no need to give the drug in so far as tranquilization within three weeks is concerned. However, there may be other reasons for doing so, hinted at in our mention of findings not. related immediately to clinical improvement, which we hope to understand in the course of our future work.

#### MEDICO-LEGAL ASPECTS OF POST-TRAUMATIC EPILEPSY

#### IRWIN N. PERR, M.D.<sup>1</sup>

It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

—Sherlock Holmes

Courts are often called upon to render decisions based on the relation between injury and disease. That the type of testimony allowed in courts is often distorted and twisted is apparent to many physicians. Although certain problems may be quite common to many cases, each court presentation remains an entity unto itself; of this, Dean Pound (35) has stated,

The conditions of today call for planned and orderly cooperation of the lawyer and man of science in doing systematically for types of questions what has been done unsystematically and often blunderingly for each case as it arose.

Post-traumatic epilepsy occupies a rather unique place in the field of legal medicine in that it is one of the few diseases that develops long after the related injury. Therefore the probability or improbability of such a complication is a very important medicolegal consideration. Previous articles (2, 10, 11, 14, 32, 33, 43) have commented on various general aspects of the relation between epilepsy and the law. This paper covers the following questions: 1. What is the relation between injury and epilepsy? 2. How is post-traumatic epilepsy recognized and differentiated from other types of epilepsy and other illnesses? 3. What are some of the features of the course of posttraumatic epilepsy? and 4. How does one estimate the likelihood of post-traumatic epilepsy developing following a head injury? Although answers to these questions are not clearcut, there is much information available on which to base a reasonably expert opinion.

Probably in no other field of medicine is the position of the expert medical witness more difficult than in testifying in cases dealing with head injury. Between limita-

When (a) mishap finally occurs, the patient often finds himself obliged to seek legal aid and to obtain the financial coverage he had so fondly imagined earlier was his by right of purchase, of employment, or by virtue of citizenship in the modern state. He now suddenly plunges into a bewildering pool, the currents of which he only vaguely may have suspected earlier. To stay in business, his insurers attempt to minimize his complaints and thereby his compensation. To counteract this tendency, his lawyers inflate the estimate of his damage. Members of the jury bend toward far or lean settlements according to their generosity with other people's money, or to their cynicism. The doctor's dilemma lies in giving testimony based on medical fact in the midst of frank and frantic partisanship.

Thus one encounters this representative statement by a very prominent plaintiff's attorney, Belli(4).

Traumatic epilepsy may not show itself for as much as 18 years after the damage to the brain. One time the author (Belli) was presented with a case of a 3-month-old child that had been placed in a hospital for surgery on a cleft palate. The day after the operation, unaccountably, the child was seen in its bed with a stellate (star) skull fracture. The recovery was uneventful. A year later the most complete examination revealed not a sign of brain damage. Should settlement be postponed for some 21 years until majority is reached, when there would probably be no chance of secuela (although there have been cases that manifested themselves years later)?

This specific example will be discussed below to illustrate the probabilities involved in such cases.

Another aspect of this problem, most important to the examining physician, is that reported by Hyslop(18) who studied 750 head injury cases involving litigation. Of these, 65(8.6%) raised the possibility of

tions of medical knowledge and vaguely defined clinical entities on the one had and the avid partisanship in the courts on the other, the physician finds that being an "expert" is no easy task. Referring to this problem, Hamby (17) states,

 <sup>&</sup>lt;sup>1</sup> Clinical Director, Fairhill Psychiatric Hospital,
 12200 Fairhill Road, Cleveland 20, Ohio.

post-traumatic epilepsy. In 13(20%), he found focal brain damage and verified seizures. In 2 cases, the seizures occurred in the first 6 days following injury, with no further attacks (so that a diagnosis of "epilepsy" would not be justified). The other 11 cases all developed within 26 months following the injury. The remaining 52 cases were evaluated quite carefully; all claimed a head injury of at least a concussional nature. In 12 cases, investigation revealed no injury at all; in 3 cases there had been merely a laceration of the scalp, with careful coaching by the claimant's lawyers to bring in the question of epilepsy. In 18 cases the injury occurred as the result of a seizure; of these, 7 admitted previous attacks and 5 others were later shown to have had previous epilepsy (which had been diagnosed prior to the alleged injury). Six cases were those in which the individual had developed idiopathic epilepsy without an antecedent injury. Four had had previous head injuries which at first had been denied. In not one of the cases of focal brain injury was there an attempted fraud; of the other 52, 28 (54%) showed malingering or fraud with respect to the character of the injury or its effects. Thus the number of frankly fraudulent cases outnumbered the true cases of post-traumatic epilepsy by more than two to one. No similar studies have been found, but this report brings clearly into focus one of the chief difficulties facing the examining physician.

There have been many legal cases in which post-traumatic epilepsy was a prime consideration. Unfortunately, the medical data contained in the official legal records are too sparse to allow comment. Some aspects of these cases will be illustrated below. The various questions raised are most important and stress the fact that adequate evaluation is essential inasmuch as epilepsy is a disabling disease with great social handicaps to those so labeled and it is considered by laymen to be a most revolting disease so that compensatory awards tend to be high.

In. Kuemmel v. Vradenburg (57), the claimant had a depressed skull fracture requiring surgery in order to remove bone and dirt from the brain, with resultant

neurologic damage. The medical expert testified that the patient was likely to have a spastic paralysis and that such injuries are "likely to cause people to have convulsions or epileptic fits." In a New York case (55), the plaintiff was hit by a falling rock at a state park, sustaining a deep penetrating fracture of the skull. One of the resulting complications was post-traumatic epilepsy which was a factor in the final award of \$72,867.28. In Nagala v. Warsing(59), a boy, 3 years, 10 months old, had a compound skull fracture, with much brain damage, and unconsciousness of 13 day's duration. In this case, no specialist in a neurological field testified, but there was clearcut evidence of poor coordination on the right side and ocular difficulties. Among the elements considered in reaching an award were the possible development of personality problems and epilepsy.

A common situation is that where epilepsy develops and the patient claims that is was the result of an antecedent injury. In Cochran v. Wimmer (54), a claimant attributed the onset of epilepsy to an alleged injury 4 days earlier. There was no external evidence of a physical injury. The court ruled that the problem was the determination of whether this was traumatic or idiopathic epilepsy, and thus that this was a question of fact to be decided by the jury. In Bartholomew v. Impastato (53), the court ruled that opinions voiced by two physicians, as to mental injuries which might result from cerebral injuries sustained by a 3-year-old child due to fault. were too speculative to warrant an award of damages based on the conclusion that the injuries were permanent.

The predictability of the future development of epilepsy is most important in the granting of an award. In Thompson v. Anderman (60) a boy of 13 with the mentality of a 10-year-old had a basal skull fracture, contusion of the brain stem, and hemorrhage from the left ear. Taking into account his age, life expectancy, as well as the possibility of epilepsy developing, an award of \$54,000 was granted. All 3 doctors agreed on a possibility of epilepsy, but did not feel that it was likely in view of the fact that more than 3 years had passed since the injury, one expert stating, "We are always

leery about a seizure developing 3 years after the injury." In another case (56), there was an award of \$15,000 for a skull fracture and lacerations sustained by a 6-year-old "who would probably suffer in later years from convulsive disorder." Bony fragments were removed from the brain, and a small metal disc inserted in the skull. The EEG suggested a focal convulsive disorder in the left temporal area "probably with some grand mal component." Testimony stated that, "during the war 50-75% of those receiving such wounds developed convulsive disorder" and that "75% of those with an abnormality like that of appellee (the claimant), resulting from injury, will sometime develop focal epilepsy."

An interesting case was that of Melendez v. N.Y.C. Omnibus Corp. (58) where a 46-year-old cook, alighting from a bus, suffered a skull fracture with traumatic epilepsy, post-traumatic psychosis, right-sided paralysis, and aphasia. The court reduced the award when it was shown that the plaintiff had not worked for 23 months prior to the injury and that he had a history of psychoneurosis for which he had previously been discharged from the army.

These illustrations point out some of the problems which arise in courts concerning post-traumatic epilepsy.

### FREQUENCY OF POST-TRAUMATIC EPILEPSY AS COMPARED WITH OTHER TYPES OF EPILEPSY

When epilepsy develops, the type and cause must be ascertained, inasmuch as post-traumatic epilepsy is compensable in contrast to idiopathic epilepsy and other types which are not. Statistically, post-traumatic epilepsy is a relatively insignificant type of epilepsy. Idiopathic epilepsy constitutes about 78% of epilepsy while post-traumatic epilepsy occurs in about 3.05% of cases. Thus idiopathic epilepsy is found 15 to 20 times more commonly. Table 1 illustrates this incidence in two studies.

Another large report from the Montreal Neurological Institute (19) showed that in 2,000 cases of epilepsy, only 86 (4.3%) were post-traumatic in origin. Thus, when a case of epilepsy is presented, all causative factors must be evaluated. The discovery of a brain tumor in an alleged post-traumatic case may be life-saving.

#### TABLE 1

# RECURRENT CONVULSIVE SEIZURES IN 2,000 NON-INSTITUTIONALIZED CASES OF EPILEPSY AT ALL AGES

	After Lenner (22)
Non-demonstrated	77.6%
Cerebral Trauma	5.7 •
Birth Injury or Congenital Defe	et 5.6
Brain Infection	4.2
Brain Tumor	2.6
Cerebral Circulatory Defect	1.9
Extracerebral Causes	0.9

#### Analysis of 689 Patients Whose Attacks Began after 20 Years of Age

1	After Livingston (23)
Idiopathic Epilepsy	77.2%
Hypertension or Cerebral	
Arteriosclerotic	12.1
Alcohol	4.1
Post-traumatic	2.5
Neurosyphilis	1.6
Pregnancy	. 1.2
Cerebral Birth Trauma	0.6
Brain Abscess	0.3
Brain Tumor	0.3
Cysticercosis	0.1
-	

#### SOME PATHOLOGIC FACTORS

Epilepsy is a disease of the brain; therefore, in order that post-traumatic epilepsy develop there must be an injury to the brain. "Laceration of the brain is an essential factor-whether or not there is injury to the skull"(8). Injury to the brain can occur indirectly as in a contre coup injury whereby the tips of the temporal poles are traumatized by transmission of the force of the blow or injury may result directly from trauma in the area of the blow. There may be damage from a closed head injury in which there is no depression of bone in which case the injury may be a scalp laceration, concussion, or even a non-depressed fracture. On the other hand, there may be a compound fracture with penetration of the dura matter with direct and obvious injury to the brain. The distinction between these two types of injury must be kept in mind in evaluating this problem as the likelihood of a subsequent epilepsy correlates to a great extent with the type of injury. Thus scale injuries or lesser skull injuries may be merely incidental. In addition, factors such as extracerebral bleeding may not be related to the problem of epilepsy so that hematoma per se without cerebral damage would not be a likely causative factor. Analysis of type of injury will be elaborated below.

# INCIDENCE OF POST-TRAUMATIC EPILEPSY FOLLOWING HEAD INJURY

Analysis of reported statistics must be based on many distinctions, the two most important of which are (a) war reports versus civilian studies and (b) closed injuries as opposed to penetrating injuries. Because of numerous variables, few studies are comparable and each report must be analyzed in its individual context. For example, based on published reports, one can state that the incidence of epilepsy following head injury is 0.1% to 50%. Obviously the quoting of any particular number conveys little; some reports even indicate that the likelihood of epilepsy following head injury is less likely than in the absence of any injury.

Even wartime studies, despite the fact that they are the most common source of statistics, contain much conflicting material. Numerous studies based on the experience in World War I and World War II are available from many countries. The range of incidence here was 1.5% to 49% (compared to the incidence in the population at large of 0.5%). The British Ministry of Pensions reported an incidence of 800 epileptics (4.5%) in 18,000 gunshot wounds of the head. Though several studies are in the general range of 2 to 7%, others report 12.1% (a French report), 44% (a German study of 562 cases), 27%, 49.5% (of 1,234 cases), 45%, and 43% (of 820 cases). The basic question, of course, pertains to the group being reported inasmuch as this is apparently the source of much confusion. In contrast to the above figures is the largest single study (12) reported of the civilian population of Switzerland in a 14 year period from 1919 to 1933. Here there were only 50 cases of traumatic epilepsy in 47,-130 head injuries, an incidence of 0.12% or less than that of the general population.

Why is it then, that the war studies report high figures in comparison to studies of civil injuries? Let us look at a wellknown study, that of Ascroft(1). In 1939 he reported on 317 cases from World War I; of these, 34% had seizures. In cases where there was penetration of the dura matter, the incidence was 45%; when there was no penetration, the incidence was 23%. There are several factors for this relatively high "incidence." First, a number of persons were included who had seizures immediately following the injury (even if only one seizure) without recurrence. Secondly, many cases were excluded because of insufficient data, and this would apparently contain more cases who did not develop epilepsy. Thirdly, many minor injuries were not included; neither were cases where the damage was to the cerebellar area of the brain. The group in general was one in which the members were severely injured. A fourth very important factor was that these injuries were caused by high velocity missiles, which caused great brain damage in contrast to usual civilian injury by a blunt instrument at considerably lower velocities.

The differences between war and civil injuries have been commented on by many. Siris(41) reports,

Among the ways (in) which head injuries of war differ from those of civil life is the incidence of subsequent epilepsy. . . . The development of this condition following all types of civil head wounds is considerably lower, running in general between 0.5 and 2 per cent, not much higher than the incidence of epilepsy in the population at large.

Sachs (40), noting the difference between missile and blunt injuries in the causation of epilepsy, comments,

It is very striking that the incidence of epilepsy following fractures of the skull in civil life is far less frequent than in war wounds, and, of course, one obvious difference is that in the war cases, compound fractures are much more common.

Basically much can be summed up by this statement (15),

Suffice it to say that the highest incidence claimed is 20% and the lowest a good deal less than that in the general population; and that it is at least very probable that the first figure relates to a selected group of severe head in-

juries and the second is diluted with many trivial cases.

Further surveying of reports reflects the variance in reported incidence. In one war study(24) of 200 cases of severe brain injury, caused by penetration of the dura mater by artillery shell fragments and rifle bullets, the incidence of epilepsy was 16.5% (33 cases). One English study(44) showed a less than 2% incidence where the dura was not penetrated, compared with a 27% incidence where there was penetration with brain damage, while another English report(37) of 820 cases of penetrating brain wounds reported an incidence of 43%. However, here again one runs into the custom of classifying as an epileptic the veteran who had but one seizure. Two German reports (3, 7) report incidences of 44% and 49.5% while in 279 American cases (51) the incidence was 36.2%.

Seizures following lobotomy (a direct injury to the brain) occur in 25.6%; 60% of these are controlled by medication (13). Bickers (5) reports the incidence in open head injuries as 5.5 to 20% and in closed head injuries as 2.5% with seizures after simple concussion almost unknown.

Most reports concerning closed head injuries give an incidence of 2 to 6%(34). Military reports indicate a higher incidence, but here again one sees the results of high velocity missiles causing injury as well as the apparent inclusion of only the more severely injured. In general, reports from civilian studies indicate an incidence less than one-third the rate of that in military reports.

A very important study is that of Penfield and Shaver (31), a summary of which is shown in Table 2. Most important was the finding that in 126 brain concussions there were no cases of post-traumatic epilepsy—a finding which has been supported elsewhere. In 407 head injuries, the total incidence was less than 2.5% (11 cases).

The larger the series of cases, the lower the incidence reported; the largest series ever reported being that of Feinberg (12) where the incidence was 0.12% in over 47,-000 cases. Of these, Denny-Brown (8) says,

The series of Feinberg is therefore by far the largest unselected group of civil head injury,

#### TABLE 2

INCIDENCE OF POST-TRAUMATIC EPILEFSY FOLLOWING VARIOUS TYPES OF HEAD INJURY

	(after Penfie	ld and Spe	ver)
	Tota!		
Туре	Cases	Number	2
Scalp wounds without			•
fracture	193	1	0.5
Concussion, contusion, compression above	or 40	0	0
Fracture without prover al tear (including sub			
chnoid hemorrhage)	136	7	5.1
Fracture with dural te	ar 38	3	7.9

and the best figure we have at present for such a group.

In that series, the rate of epilepsy was 5 per 1,000 with fractures (0.5% or the same as that in the general population).

#### THE RELATIONSHIP OF FRACTURE, HEMOR-RHAGE, AND OTHER RELATED INJURIES

A pertinent question is "what is the likelihood of epilepsy following a skull fracture with no depression?" Denny-Brown(9) states,

It may be noted . . . how clearly the figures show that fracture of the skull is without importance in the question of epilepsy.

#### Penfield (28) comments,

Closed injury to the skull, regardless of its severity, rarely results in post-traumatic epilepsy. . . . The likelihood of epilepsy is greatly increased in case the dura has been penetrated and the brain lacerated by fragments of depressed bone or missile. This is apparently quite independent of the severity of the cerebral concussion and intracranial hemorrhage which may have attended the injury.

Epilepsy is rarely found after subdural hematoma, meningitis, thrombophlebitis, thrombosis, *etc*.

Penfield (27) further states,

Brain laceration more often causes seizures than cerebral contusion or closure of a cerebral vessel. Subdural hematoma and internal hydrocephalus never do unless some other local complication is present.

These factors can be summed up in this statement by Denny-Brown(9):

Depression of an area of bone in the cranial vault is not necessarily a severe or dangerous happening. . . . The important feature is whether or not the dural lining of the skull is torn by a sharp edge of bone jutting inwards . . . a simple fissure in the vault of the skull is not of itself harmful. . . . The cases of war injury demonstrate that fracture per se is not of any real moment in this question. . . . It must be remembered that the cause of epilepsy is damage to the brain.

### THE MEANING OF A CONVULSION SOON AFTER INJURY

An essential element of epilepsy is its recurrent or periodic nature (32). Since there are many other causes of convulsions, this element must be found in addition to other characteristics of epilepsy. An epileptiform attack immediately following an injury does not necessarily denote epilepsy. Denny-Brown (8) states,

It should be at least considered whether early convulsions deserve the name traumatic epilepsy or should the term "immediate traumatic epilepsy" be given some special annotation. There are cases where the diagnosis of epilepsy was made on a single convulsion in the early stage of severe head injury, without subsequent disability, and where diagnosis interfered with subsequent employment. . . . Because a drug, or electric shock, or anoxia, will provoke a convulsion, it cannot be maintained that "epilepsy" is thereby produced.

Thus convilsions immediately following the injury may indicate only a temporary response to an injury. As such, they usually disappear. In contrast, the basic pathology behind post-traumatic epilepsy is scar formation which usually takes months to develop.

This is confirmed in many reports. Marsh(26) states that not every case of convulsive disorder which follows an injury to the head is necessarily a bona fide case of post-traumatic epilepsy. Cavins(6) comments that Ascroft's investigation appears to show that fits which occur in the first two weeks after injury and operation do not predispose to epilepsy at a later date and that this is in agreement with the experiences of patients who have seizures in the first days after subarachnoid hemorrhage or after the removal of brain

tumors. Penfield in discussing Watson's paper (51) remarks,

In Ascroft's figures of 45% of epilepsy after injury, he included the patients who had seizures during the first two or three weeks after brain injury. But only 20% of those patients will become chronic epileptics who have recurring seizures. The percentage is thus too high.

Walker has done much work on the subject of post-traumatic epilepsy (36, 45, 46, 47, 48, 49, 50). He states (45):

Paroxysmal alterations in the state of consciousness very commonly follow a head injury. Even shortly after a blow producing only a momentary loss of consciousness, the victim is likely to feel dizzy and light-headed and to black out when he assumes an erect position. These minor lapses are generally considered as due to nervous instability producing a temporary ischemia.

#### He further remarks (48):

Some members of the legal profession . . . imply that a few dizzy spells or momentary blackouts after a head injury and an abnormal electroencephalographic finding are sufficient to establish the diagnosis of epilepsy, with all the stigmas attached to the "falling sickness," and who, on this basis, ask a large award to compensate their "epileptic" clients for the recurrent seizures that will mar his or her future. Such a contention is obviously false since neither these clinical manifestations nor abnormal brain waves are adequate for the diagnosis of a convulsive disorder per se.

# HEREDITY AND THE DEVELOPMENT OF POST-TRAUMATIC EPILEPSY

Some authorities feel that predisposed individuals are more likely to develop post-traumatic epilepsy, and that constitutional factors exclusive of the injury should be considered as a causative factor. Other studies deny the validity of this concept. For instance, one study (36) reports that families of post-traumatic epileptics show a 4.5% incidence of seizures compared with 3.4% in normals and 17% in families of all epileptics. That there is a familial disposition in idiopathic epileptics is well verified, as is shown above. Slater (42) states,

Some degree of inherent susceptibility may be present in persons who suffer "traumatic" epilepsy.

Walker (47) and Siris (41) have discussed this theory. Expressing a contrary view, Phillips (34) states,

There is no reason to suppose that the subject of cranial trauma is more likely to suffer a fit if he has a . . . family history of epilepsy.

Others (26, 51) agree with this viewpoint. Thus, at present, there are conflicting views on this subject.

# TIME INTERVAL BETWEEN THE INJURY AND THE DEVELOPMENT OF POST-TRAUMATIC EPILEPSY

This subject is of extreme medicolegal importance as the incidence of epilepsy is closely related to the time interval following the injury. Where there has been an injury, a lapse of time, and no development of epilepsy, the reasonable or probable likelihood of such a complication is an important consideration in the assessment of damages. The lawyer, in such a case, must show that there is a 51% chance of such a complication or that such a complication is more likely than not. The claimant's attorney, in order to stress the possibility of such a sequel, may quote a few cases in which epilepsy developed following an injury 15 or 20 years earlier.

Actually, cases in which epilepsy develops many years after an injury are relatively rare. Mann(25) reports one case with a 24-year interval between injury and onset of seizures. In his paper of 1949, he reports finding only 5 cases where the epilepsy developed subsequent to a 10 year period following the injury. His patient, a woman, had been kicked in the head by a horse at age 3 and suffered a depressed skull fracture which remained palpable through the years. There were focal EEG findings. After several years of various types of drug therapy, surgical extirpation cured the epilepsy and confirmed the diagnosis. Such cases are so rare as to be meaningless statistically, although their intriguing and dramatic qualities are not to be lost in the courtroom.

More important are the results in reported groups of cases. Phillips (34) reporting 190 cases of epilepsy after closed head injuries showed that 55% develop in 3 months, 82% in one year, 85% in 2 years,

97% in 4 years, and all by 11 years. In another series (8) where epilepsy developed in 53 of 630 head injuries, epilepsy occurred in one month in 42%, in 1 to 6 months in 30%, in 6 to 12 months in 14%, in 1 to 2 years in no cases, and in more than 2 years in 13%. In an Army series (36), 27% developed within 3 months and 58% by 6 months. Walker (45) also states that 50% develop within 9 months and, of those in whom epilepsy develops within 5 years, 80% have the initial seizure within 2 years. Jasper and Penfield (19) report an incidence of 46% in the first year, 63% in 3 years, and 80% in 5 years.

Thus, approximately 50 to 80% develop in the first year and about 55 to 35% by 2 years, with a probable figure of 75% for the 1½ to 2 year period. Thus, most often, post-traumatic epilepsy will be brought into trial proceedings as an existing complication, rather than as a potential one.

#### OTHER FACTORS CONCERNING TYPE OF INJURY

Injuries to the motor area will give the highest incidence of epilepsy; however, such injuries do not differ to any significant degree from trauma to the frontal and temporal areas. Injuries to the occipital area or the midbrain on the other hand are not characterized by epilepsy. Russell and Whitty(37, 38, 39), Ascroft(1), and others comment on this distribution. Whether or not the presence of pieces of bone or metal embedded in the brain play a pertinent role is another question. Apparently this factor is not especially relevant to the incidence of epilepsy, perhaps because large foreign bodies are usually removed surgically, and the ones that are left do not seem to be epileptogenic. Where there is infection of brain, the incidence is higher. Early surgery does not seem to lower the incidence. The incidence is higher where there is a prolonged period of post-traumatic amnesia (PTA). In one series (15) of 38 cases, there was a PTA of more than 3 hours in 28, under 3 hours in 8, and under one-half hour in two. Many cases show no unconsciousness with the absence of unconsciousness reported in 23

Inasmuch as the incidence is related closely to damage to the brain, one would

expect to find supporting evidence on neurologic examination. In a well studied series of Army cases (36), 94.3% showed neurologic damage with only 14 of 246 cases demonstrating no abnormality on neurological examination. On the other hand, the presence of severe head injury does not mean that epilepsy will develop. One study (16) mentions a head injury group, with no convulsions, that was characterized by greater injuries than the cases which developed post-traumatic epilepsy.

#### SOME FEATURES OF POST-TRAUMATIC EPILEPSY

Two features should be mentioned: 1. Often the course is quite mild, and 2. Often the condition disappears completely. In 207 cases (45, 48), less than one-half had more than 2 attacks of any type per year. In major attacks, only 30% had more than 2 seizures a year; and of the group studied, 47% had no attacks for 2 years, 35.6% had no attacks in the period from the fifth to the tenth year after the injury (this study was a 10 year followup), and 14.6% only 1 or 2 attacks a year in the last 5 years of the period. If in the first 5 years, seizures cease for a year, the chances are 4 out of 5 that there will be no seizures in the next 5 to 8 years. If there is a cessation of attacks for 2 years, the chance of recurrence is only 2 in 100. Probably 40% of those with seizures in the first few weeks will have no further seizures.

The greater the neurologic deficit, the greater the disability from such factors as post-traumatic psychosis or neurosis, and the lower the basic intelligence, the more likely is the individual to be handicapped in his future adjustment. These factors seem to play a greater role than the epilepsy or even paralysis alone.

#### POST-TRAUMATIC EPILEPSY AND THE EEG

The electroencephalograph is a very useful instrument in evaluating brain function. It is one factor in the diagnosis of any type of epilepsy. Pertinent here are the findings which support a diagnosis of post-traumatic epilepsy and which may help in the differentiation of this condition from other types. The question of the EEG as a help in prognosticating the likelihood of post-traumatic epilepsy is another urgent prob-

lem. Unfortunately, the EEG does not relate well to the pathological conditions under study. Various patterns of abnormality are common to many conditions, and considerable deviation occurs even in normal subjects. Penfield(30) states,

We should agree immediately that dysrhythmia is not epilepsy and that, particularly in cases of compensation, we should be very loath to let dysrhythmia or alteration in the EEG record influence us very much. The patient who is an epileptic should be defined only as a patient who has recurring seizures.

Electroencephalographic findings following injury are of little prognostic significance. One encounters generalized and focal abnormalities, slow irregular and "spiky" focal discharges. Of the consistent slow wave focus on the EEG, Marsh(26) states that this does not prove that the patient has or will have post-traumatic epilepsy.

It signifies a focus of abnormal cellular activity which, in the majority of cases of craniocerebral injury, even of the penetrating type, does not result in convulsive seizures.

#### Williams (52) states:

An abnormal EEG persisting after a head injury does not necessarily increase the likelihood of traumatic epilepsy, but the presence of episodic outbursts of abnormal waves does. . . . Immediately after a head injury, it is usual to find some gross abnormality characteristic of severe cerebral damage during the period of resolution (which) may mimic the picture of epilepsy, but which in a few weeks subsides with gradual reappearance of normal rhythms.

As to the non-specific abnormality, he states that

the presence of this kind of abnormality in patients with head injury does not seem to be closely related to the likelihood of traumatic epilepsy.

In his series, he found larval epileptic outbursts in only 9%, but that these were helpful in diagnosis as such findings occur 3 times more frequently than in idiopathic epilepsy. Paroxysmal outbursts alone were found about equally in post-traumatic epilepsy and in head injuries without the epilepsy.

Walker (45) states,

Some years ago it was hoped that the EEG would be of diagnostic and prognostic importance in epilepsy. Experience has shown, however, that the brain waves may denote cerebral damage but do not reliably indicate or forecast convulsive complications.

In similar studies, he reports (20, 21) that 88% showed some EEG abnormality with 78% showing focal abnormality.

In one study(19) of Jasper and Penfield, localized findings (either random spikes or sharp waves) were found in 90% of the post-traumatic epileptics. It was reported that it is

questionable whether the diffuse or bisynchronous disorders are truly of post-traumatic etiology.... One may assume the probabilities are greatest that they are essential (idiopathic) rather than post-traumatic epilepsy.

In Gibbs' study (16), 92% of post-traumatic epileptics had abnormal records as compared with 47% with severe head injury, 85% in unselected epileptics, and 16% in normals.

The latter study by Gibbs, Wagner, and Gibbs (16) is a most important one in that it compared the EEG's of 125 cases of post-traumatic epilepsy, 215 cases of head injury without convulsions, 1,161 other epileptics, and 1,000 normal individuals. Interestingly the group of severe brain injuries without epilepsy had marked injury with all being unconscious at least an hour, 23% with brain laceration, 55% with bloody spinal fluid, 5% with depressed fracture, 21% with compound fracture, 8% subdural hemorrhage, and 2% extradural hemorrhage. The authors point out that EEG's done immediately after head injury are of little use, as at this time practically all patients demonstrate some findings and that as a result the EEG's in this study were done at least 3 months subsequent to the injury. Children were more likely to show an EEG abnormality. While in the post-traumatic series, the incidence of abnormalities remained almost constant; in the head injury group, it gradually declined over a 2 year period. Focal findings were 4 times as frequent in post-traumatic cases as in unselected epileptics, and focal paroxysmal findings were 21 times as common.

After cautioning about the danger in-

herent in generalization, the authors presented the following results.

I. Focal EEG abnormality is strongly

suggestive of brain damage.

- 2. Other things being equal, if generalized abnormality is present 3 or more months after a mild head injury, the chances are 16 to 1 that the abnormality antedated the injury.
- 3. In post-traumatic cases, even though the EEG is normal, the brain may be damaged (found in 3 cases of 160, or less than 1 in 50).
- 4. If a paroxysmal abnormality is found 3 or more months after the injury, the chances are at least 27 to 2 that the patient has epilepsy.
- 5. If a patient has seizures and shows focal paroxysmal abnormality 3 or more months after head injury, the chances are 21 to 7 that he has the seizures as a result of the injury rather than as a result of the other known or unknown factors that produce seizures in an unselected group of epileptics.
- 6. If a normal EEG is found 3 or more months after the head injury, the chances are at least 53 to 8 that the patient is not a post-traumatic epileptic.

# UTILIZATION OF MEDICAL EVALUATION AND STATISTICS IN LEGAL PROCEEDINGS

If seizures exist, the problem is to determine if it is post-traumatic and if possible to evaluate the severity. This is a purely medical problem based on some of the principles previously described.

The perplexing problem to physician, lawyer, and patient alike, is how to establish a reasonable probability that a given complication will develop. Utilizing the information here presented, one has the basis for rough mathematical estimates.

For example, in a civilian head injury caused by a blunt instrument, not a missile, with penetration of the skull and dura mater, the incidence of epilepsy will probably not reach twenty per cent. Since at least two-thirds of cases of post-traumatic epilepsy will develop within a 2 year period (and this is a minimal figure), if by the end of 2 years the patient has not developed epilepsy, he now has only a 63% chance of doing so. Thus, other fac-

tors excluded, the presumption becomes that the odds against the development of post-traumatic epilepsy are 16 to one.

As another example, one might return to the semihypothetical case of Belli mentioned earlier. The key features were 1. A non-depressed skull fracture, 2. No evidence of penetration of dura or local brain injury, 3. No evidence of an abnormal EEG, 4. Negative neurological examination, 5. The passage of a year, and 6. No history of injury (and if one was present, apparently not an injury by a missile, nor a severe head blow at high speeds by a blunt instrument).

It is not necessary to comment on all these features. As to the first, the incidence of post-traumatic epilepsy in such cases may be hypothecated as being less than 2% (many neurologists feel that, without local brain injury, such an injury is almost totally irrelevant to the development of epilepsy). As to number 5, since in one year more than a majority of cases will develop epilepsy if, in fact, it will develop at all—then the chances here become less than 1%. The odds are now so low that without localizing brain injury and relevant EEG findings, if epilepsy did develop, it would most likely be a case of idiopathic rather than post-tranmatic epilepsy. Without laboring the point, it may be summed up by saying that this case has become a statistical nullity.

To quote an expert in this subject, A. E. Walker (49)—admittedly out of context:

May we not say, then, with reasonable medical certainty, that if a patient without neurological symptoms or deficit and having a normal EEG has gone two years after his injury without seizures, he will not develop post-traumatic epilepsy?

Smith(43) in his excellent article states:

The risk of epilepsy following head injury is of the following order after simple concussion of the brain—0.02%; after linear fracture of the cranial vault—0.521%; after severe head injury with depressed fracture of the skull, fragments of which have lacerated the dura mater and brain—20 to 45%. It follows that in no case can the plaintiff prove probable future occurrence of traumatic epilepsy which has failed to materialize by the time of trial without adducing strong corroborative evidence of impending epilepsy such as significant changes

in serial electroencephalograms interpreted and supported by competent neurological opinion.

Thus, an effort to indicate a probability of occurence where, in fact, it has not yet occurred, faces an uphill statistical struggle. Based on the factors described, the physician can give a reasonable opinion to the court for utilization in deciding such problems. However, legal proceedings are most haphazard. Logically, no claimant should ever win a case if he has not had demonstrated epileptic attacks by the time of trial. Yet to so rule would be to deny compensation to those who do legitimately develop post-traumatic epilepsy at a later date. Walker(45), in a very imaginative suggestion, recommends that instead of awarding compensation to potential posttraumatic epileptics, an insurance policy should be granted with benefits to be paid on development of the complication. In this way, the patient will be compensated if seizures develop. If seizures do not, the patient will not be stigmatized and the primary agent will not pay a penalty.

Even if post-traumatic seizures do develop, it should be clearly understood that they do not have the same prognosis and implications as does so-called idiopathic epilepsy. In fact, if a patient has had only one or two attacks within the first year or two after a head injury, I would certainly hesitate to suggest compensation on that basis. Probably some type of epilepsy insurance would be the most equitable means of handling these cases. There is excellent evidence that such patients have a good chance of living lives which will not be punctuated by convulsions.

He feels that actuaries could work out a usable system. Certainly high standards of evaluation would be needed both to screen out fradulent claims and to protect the rights of the injured.

Related to this is the suggestion that some effort be made by an organized group of neurologists to collect standardized data on head injuries on a national scale. For instance, every head injury treated at training centers might be reported with the following information—type of injury, presence or absence of demonstrable brain injury, EEG findings, neurological examination, etc. Periodic follow-up could be done. Thus, a massive accumulation of data con-

cerning injuries in civil life could be analyzed. It is apparent from the variety of articles with frequent contradictions that failure of uniform reporting has brought confusion which is then reflected in the expert medical testimony needed in the legal disposition of such cases.

It has been the goal of this article to correlate various reports and opinions so that present knowledge may be applied as usefully and as accurately as possible.

#### BIBLIOGRAPHY

- 1. Ascroft, P. B.: Brit. Med. J., 1: 739, 1941.
- 2. Barrow, R. L., and Fabing, H. D.: Epilepsy and the Law. New York: Paul B. Hoeber, Inc., 1956.
- 3. Baumm, H.: Ztschr. f. d. ges. Neurol. u. Psychiat., 130: 279, 1927.
- 4. Belli, M. M.: Modern Trials, 1: 569, Indianapolis: Bobbs-Merrill Co., Inc., 1954.
- 5. Bickers, D. S.: J. M. Assn. Georgia, 44: 431, Sept., 1955.
- Cavins, H.: War Med., 2: 772, Sept. 1942.
- 7. Credner, L.: Ztschr. f. d. ges. Neurol. u. Psychiat., 126: 721, 1930.
- 8. Denny-Brown, D.: Am. J. Psychiat., 100: 585, 1944.
- 9. Denny-Brown, D.: Clinics, 1: 1405, April 1943;
- 10. Fabing, H. D., and Barrow, R. L.: Northwest. U. Law Rev., 50: 42, 1955-56.
- 11. Fabing, H. D., and Barrow, R. L.: Epilepsia, 3: 92, Nov. 1954.
- 12. Feinberg, P.: Epilepsie und Trauma. Inaugural Dissertation. U. Zürich. Uznach, 1934, publ. by K. Oberholzer.
- 13. Freeman, W.: Neurology, 3: 479, 1953.
- 14. Freidman, G. A.: Med. Times, 84: 1359, Dec. 1956.
- 15. Garland, H. G., and Walter, W. G.: Proc. Roy. Soc. Med., 35: 773, Oct. 1942.
- 16. Gibbs, F. A., Wagner, W. R., and Gibbs, E. L.: Am. J. Psychiat., 100: 738, May 1944.
- 17. Hamby, W. B.: N. Y. State J. M., 56: 1253.
- 18. Hyslop, G. H.: J. Indust. Hyg. and Toxicol., 31: 336, 1949.
- 19, Jasper, H., and Penfield, W.: Am. J. Psychiat., 100: 365, Nov. 1943.
- 20. Kaufman, I. C., Marshall, C., and Walker, A. E.: Arch. Neurol. and Psychiat., 58: 533, 1949.

- 21. Kaufman, I. C., Marshall, C., and Walker, A. E.: A. Res. Nerv. and Ment. Dis., Proc., 26: 476, 1947.
- 22. Lennox, W. G.: J.A.M.A., 162: 118, Sept. 8, 1956.
- 23. Livingston, S.: New Engl. J. Med., **254**: 1211, June 28, 1955.
- 24. Maltby, G. L.: J. Neurosurg., 3: 239, 1946.
- 25. Mann, L. B., Jr.: Bull. Los Angeles Neurol. Soc., 14: 187, 1949.
- 26. Marsh, C.: Bull. Los Angeles Neurol. Soc., 9: 79, Mar. 1944.
- 27. Penfield, W.: Acta Neurcl. et Psychiat. Belg., 56: 75, Feb. 1956.
- 28. Penfield, W.: Am. J. Psychiat., 100: 750, 1944.
- 29. Penfield, W.: A. Res. Nerv. and Ment. Dis., 26: 516, 1947.
- 30. Penfield, W. P.: Tr. Am. Neurol. Assoc., 81: 37, 1956.
- 31. Penfield, W. P., and Shaver, M. S.: Res. Publ. Assoc. Nerv. Ment. Dis., 24: 620, 1945.
- 32. Perr, I. N.: Cleve.-Mar. Law Rev., 7: 280, May 1958.
- 33. Perr, I. N.: Cleve.-Mar. Law Rev., 8: 129, Jan. 1959.
- 34. Phillips, G.: J. Neurol. Neurosurg., 17: 1, Feb. 1954.
- 35. Pound, R.: Clinics, 1: 1350, April 1943.
- 36. Quadfasel, F. A., and Walker, A. E.: A. Res. Nerv. and Ment. Dis., Proc., 26: 461, 1947
- 37. Russell, W. R., and Whitty, C. W. M.: J. Neurol. Neurosurg. and Psychiat., 15 93, 1952.
- 38. Russell, W. R., and Whitty, C. W. M.: J. Neurol. Neurosurg. and Psychiat., 16 73, 1953
- 39. Russell, W. R., and Whitty, C. W. M.: J. Neurol. Neurosurg. and Psychiat., 18 79, 1955.
- 40. Sachs, E.: J. Nerv. and Ment. Dis., 101: 460, May 1945.
- 41. Siris, J. H.: U. S. Nav. M. Ball., 42: 144, Jan. 1944.
- 42. Slater, J. K.: Edinburgh Med J., 53: 623, 1946.
- 43. Smith, H. W.: Tex. Law R∋v., 31: 765, 1953.
- 44. Wagstaffe, W. W.: Lancet, 2: 861, 1928.
- 45. Walker, A. E.: Postgrad. Med., 24: A34, July 1958.
- 46. Walker, A. E.: Tr. Am. Neurol. Assn., 81: 37, 1956.
  - 47. Walker, A. E.: Post-traumatic Epilepsy.

Springfield, Ill.: C. C Thomas, 1949.

48. Walker, A. E.: J.A.M.A., 164: 1636, Aug. 10, 1957.

49. Walker, A. E., Caveness, W. F., Barrow, R. L., and Allen, W. S.: Clinic. Neurosurg., **2**: 55, 1955.

50. Walker, A. E. and Quadfasel, F. A.: Am, J. Psychiat., 104: 781, 1948.

51. Watson, C. W.: A. Res. Nerv. and Ment. Dis., 26: 516, 1947.

52. Williams, D.: J. Neurol. Neurosurg. and Psychiat., 7: 103, July 1944.
53. Bartholomew v. Impastato, 12 S. 2d

700 (La., 1943).

54. Cochran v. Wimmer, 81 N. E. 2d 790 (Ind., 1948).

55. Dakin v. State, 130 N. Y. S. 2d 39, 288 (1944).

56. Fort Wayne Transit v. Shomo, 143 N. E. 2d 431 (Ind., 1957).

57. Kuemmel v. Vradenburg, 239 S. W. 2d 869 (Tex., 1951).

58. Melendez v. N. Y. C. Omnibus Corp., 139 N. Y. S. 2d 788 (1955).

59. Nagala v. Warsing, 219 P. 2d 603 (Wash., 1950).

60. Thompson v. Anderman, 284 P. 2d 507 (N. M., 1955).

# THE EFFECT OF RESOCIALIZATION TECHNIQUES ON CHRONIC SCHIZOPHRENIC PATIENTS <sup>1</sup>

GARFIELD TOURNEY, M.D., RITA SENF, Ph.D., H. WARREN DUNHAM, Ph.D., ROBERT S. GLEN, M.D., AND JACQUES S. GOTTLIEB, M.D.<sup>2</sup>

Because chronic schizophrenic patients constitute the bulk of prolonged care patients in mental hospitals, there is need to identify the factors contributing to the chronicity of the schizophrenic illness and to discover better methods of management and treatment for these patients. The purpose of this study was to investigate certain aspects of these problems.

One of the principal manifestations of schizophrenia is social isolation (1, 7, 17). The patients become withdrawn, avoid interpersonal contacts, and seek a reduction in external stimulation. The isolation of patients cannot be studied in any restricted sense, but must be viewed in terms of their entire personality adjustment. The chronic schizophrenic patient shows a failure of communication, along with the use of withdrawal and autism as defensive mechanisms, which in turn impede the patient's assumption of a social role within the family and society(4). With chronicity of the illness, schizophrenic patients tend to accept their isolation, cling to it in a hostile manner, and resist the stimulation of others for establishing interaction.

The symptom of isolation may be augmented through routine mental hospital management with its limited resources (2, 5). The custodial management of the chronic schizophrenic patient is often aimed at subjection and control, rather than at an understanding of behavior. Problems arise because of the vast numbers of the mentally ill, the small number of employees with suitable training, and the relatively ·low status and financial rewards for such employees. Characteristically, few social contacts occur on the disturbed wards, opportunities for heterosexual interaction are limited, and patients tend to be chronically preoccupied with their own inner conflicts.

As the patient's hospitalization continues, his motivation for recovery becomes reduced, and he further clings to his hosfile isolation, making it more difficult for personnel to relate with him. Thus employees may gradually begin to feel that attempts at helping patients are hardly worth the effort.

This study investigated the therapeutic effects of an intensive socialization and activity program on an experimental group of chronic disturbed schizophrenic patients. These patients were selected from a large state hospital and placed in a research and teaching hospital. The period of active work with the patients was 9 months. A control group, meeting the same criteria as the experimental group but remaining at the state hospital without any special treatment, was evaluated at the beginning and end of the project to compare changes in the 2 groups. Follow-up evaluations were also made.

The intention was to provide an approach which could have practical application within a state hospital setting (8, 9, 10, 11, 14, 15, 16). For this reason no individual psychotherapy was used. For the experimental group the aim was to make the fullest possible therapeutic use of the personnel and resources available. Individuals from various disciplines, including psychiatry, nursing, occupational and recreational therapy, sociology, psychology, and social work constituted the treatment and research team. It is realized that such a study involves numerous uncontrolled variables. This report will be concerned mainly with the psychiatric evaluation of the patients.

# RESOCIALIZATION AIMS WITH THE EXPERIMENTAL GROUP

One of the major differences between the experimental situation and the ordinary state hospital was the greater number of personnel available to work with the experimental group patients. The ratio of

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of the American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> The Lafayette Clinic and Wayne State University College of Medicine, Detroit, Mich.

personnel to patients was 1 to 2, while at the state hospital the ratio was about 1 to \*20 or more. The participating staff were all under the direction of a staff psychiatrist who was in charge of the overall operation of the experimental program. A resident psychiatrist was responsible for working with the patients and personnel. The nursing staff had considerable responsibility in acting directly with the patients. The head nurse had administrative duty, such as conducting ward conferences, making broad assignments to the staff, and coordinating their function. Staff nurses had close and prolonged contact with patients, and worked closely with occupational and recreational therapists in planning and administering the detailed activity programs. The attendant nurses were expected to learn to know each individual patient, to acquire an understanding of the patients' behavior, and to use this knowledge constructively in promoting recovery. The social worker attempted to work closely with a family member of each patient, with the aim of stimulating interest and evaluating the home situation as a possible resource for discharge. Two sociologists lived on the ward, observing and interacting with the patients.

The goals of the socialization program were to stimulate interpersonal relationships among the patients, and to foster resocialization and integration of ego forces. The program permitted patients to operate at their own levels of functioning, with encouragement to progress to higher levels by providing suitable activities. Insofar as possible, there was an attempt to have the patients participate in the weekly patient councils and daily program planning meetings so as to fit the program to their needs and desires. The patients lived together on one ward, and were not segregated by sex in the living and dining area.

Various drugs were used in treatment, but principally chlorpromazine and reserpine. The use of drugs was dictated by disturbed behavior and was kept at a minimum. No attempt was made to standardize the use of drugs throughout the group.

All the patients participated in group psychotherapy along with various members of the ward staff. The aim of the meetings

was to encourage the patients to discuss their feelings and problems as they occurred on the ward, and the ways in which these factors were related to their illness and personality adjustment.

#### SUBJECTS

The patients had the following characteristics: diagnosis of schizophrenia, chronically ill and disturbed prior to the use of drug therapies, ages between 22 and 40 years, hospitalized 3 years or longer, Caucasian race, some family member available for contacts with the hospital, no marked physical defects, no recent electroconvulsive therapy, and average intelligence as estimated from clinical impression. Of the 20 men and 20 women, 10 men and 10 women constituted the experimental group, the remainder the control group. An attempt was made to match the experimental and control patients in pairs of the same sex so that they would be equivalent in age, type of symptomatology, duration of hospitalization, and general appearance. Comparative data for the 2 groups are given in Table 1.

# PROCEDURES OF OBSERVATION AND DATA COLLECTION

Techniques used by the psychiatrists and nursing staff focused mainly on appraisal of the individual. Both groups were evaluated at the beginning and end of the project, and again 20 months later.

The Hospital Adjustment Scale (6, 12) was used to measure the patient's adjustment to the hospital situation; it is based on clear descriptions of overt behavior, such as personal appearance, hygiene, amount of activity, and social participation. These scales were filled out by the head nurse and a psychologist; at the state hospital the necessary information was secured from an employee who knew the patient well.

Both psychiatrists examined the patients clinically, following a standard form for mental status examination, and rated the patients on the Malamud-Sands psychiatric rating scale (13). This scale was used to give an objective indication of the degree of psychopathology; it includes items for evaluation of general behavior, thought content, mood, affectivity, and association

TABLE 1

Mean Age and Duration of Hospitalization by Groups and Sex

	Experimental (	Group (N=20)	Con	trol Group (N=20)	
	Mean Age	Mean Duration of Hospitalization	Mean Age	Mean Ducation of Hospitalization	f
Men	29.6	6.4	32.1	8.0	4
Women	32.7	7.2	33.0	7.8	
Total	31.1	<b>6.8</b>	32.5	7.9	

processes. At the end of the project the psychiatrists also rated the patients' overall change. A follow-up was made by social workers to determine the status of the patients 8 months after termination of the project. Twenty months after termination the available patients were rated by the staff psychiatrist on the Malamud-Sands Scale, and the Hospital Adjustment Scale was also administered.

For the experimental group, the Malamud-Sands ratings and the Hospital Adjustment Scale were also obtained at 2 intermediate times—approximately 3 and 6 months after initiation of the project. Since these interim data did not provide any additional information, they will not be reported here.

The experimental group patients were observed at meal times by the sociologists, who recorded on a diagram where each patient sat. The tables each seated 4 patients, and there was a consistent pattern of furniture arrangement. Observations were made during the first 8 months of the project; for analysis they were grouped into 16 sets of 20 meals each. One aspect of these data will be reported here, i.e, the number of associations with the opposite sex. For each patient the percentage of heterosexual associations was obtained for each of the successive sets of meals. The 10 men were divided into 2 groups of 5 each, an "improved more" and an "improved less" group. This classification was based on the clinical judgment of the psychiatrists. The mean percentage of heterosexual associations was calculated for these groups. The women were similarly divided into 5 "improved more" and 4 "improved less." Data were not available for one woman, who would not voluntarily eat at the table.

#### RESULTS AND DISCUSSION

The mean Hospital Adjustment Scale scores are presented in Table 2. The experimental group was slightly better adjusted than the control group, and the women slightly better than the men, but neither of these differences was significant. The one clear change from the initial to the terminal test is that the experimental group men improved significantly (p<.05), coming up to the level of the experimental group women. A possible explanation of the relatively poor mean score of these men on the initial test is the lack of heterosexual interaction for them on the chronic wards of the state hospital. Female patients at least have some interaction with male physicians. The lack of improvement on the terminal test for the women may be due to the marked exacerbation of schizophrenic symptomatology in 2 female patients, which undoubtedly offset the slight to moderate improvement seen clinically in the ' other women. Differences between mean scores at termination and 20 months later were not significant.

Looking at the results of the Malamud-Sands ratings in Table 2, it is apparent that the two psychiatrists differed in their evaluation of the patients' psychopathology. Dr. A rated the patients slightly better on the terminal than on the initial test, but this difference was not significant. According to his ratings, the experimental group did not differ from the control group, nor did the men differ from the women. Dr. B's ratings, however, showed the experimental group as significantly less pathological than the control group (p<.05), and the patients in general as better on the terminal than on the initial test (p < .025). His ratings tend to indicate greater improvement for the experimental than for the control

TABLE 2

HOSPITAL ADJUSTMENT SCALE AND MALAMUD-SANDS RATINGS
INITIAL, TERMINAL, AND FOLLOW-UP MEAN SCORES <sup>1</sup> BY GROUPS AND SEX

	Experimental Group		,	Control Group	
t - 1 -	Men	Women		Men	Women
■Hospital Adjustment Scale <sup>2</sup>	,	٠.			,
<ul> <li>Initially</li> </ul>	51.5	69.5		46.5	58.0
At Termination	66.3	65.2		39.6	60.5
• 20 Months Later	61.9	74.3		57.2	55.9
Malamud-Sands Ratings 8-Dr. A	A				
Initially	54.4	57.8	•	57.4	60.2
At Termination	46.7	<b>53.5</b> ,		52.9	58.0
20 Months Later	56.0	49.0		48.4	52.1
Malamud-Sands Ratings 3-Dr.	B				
Initially	46.1	46.8		49.0	50.0
At Termination	35.2	32.2		46.2	48.8
					•

<sup>&</sup>lt;sup>1</sup> Each mean is based on 10 cases, except for the 20 month follow-up, where N=8 for the Experimental Group women and N=9 for the Control Group men.

group. Inspection of Table 2 also reveals the interesting fact that Dr. B's mean ratings in every case were more favorable than Dr. A's. Each psychiatrist had equally brief contact with the control group patients; here Dr. B rated the patients slightly more favorably than did Dr. A. Dr. B diverged even more from Dr. A with respect to the experimental group. This is no doubt a reflection of the fact that, in addition to a generally more favorable rating tendency, Dr. B was much more closely and intimately involved with these patients than was Dr. A, whose contact with them was more limited.

Dr. A's follow-up ratings did not differ significantly from those at termination, except for the experimental group men, who were rated as significantly worse (p < .05); these follow-up ratings were approximately the same as the initial ratings.

In their terminal clinical ratings of change (Table 3), the 2 psychiatrists agreed quite closely in their evaluations of

the experimental group; each considered 9 patients (45%) to have shown some improvement. For the control group, they also agreed fairly closely as to the number showing improvement, but differed somewhat as to the number of patients rated worse, with Dr. A in this case giving the more favorable ratings. In comparing the 2 groups, these ratings favor the experimental group.

Since the 2 psychiatrists tended to agree more consistently in their overall clinical ratings of the patients than in their Malamud-Sands ratings, it is concluded that certain personal discrepancies occurred in the utilization of the latter device. Therefore conclusions drawn solely from the Malamud-Sands ratings are ambiguous.

Although numerically Dr. A's ratings at termination and 20 months later were essentially the same, it is interesting to note that many of these figures do not refer to the same patients, indicating the variability

TABLE 3

OVERALL CLINICAL RATING OF CHANGE

•	Experimental Group				Control Group		
•	Worse	Same,	Improved		Worse	Same	Improved
A Termination—Dr. A	2	9	9	•	2	11	7
At Termination—Dr. B	2	9	9 .		6	6	8
20 Months Later-Dr. A	1	11	· 8 .	•	1	13	6

<sup>&</sup>lt;sup>2</sup> The higher the score, the better the adjustment.

<sup>3</sup> The lower the score, the better the adjustment.

of symptomatology over a period of time.

Table 4 reports the disposition of patients at termination of the project and 8 and 20 months thereafter. At termination, 6 members of the experimental group were able to leave the hospital and be placed on family care or convalescent status. No patients were able to assume any degree of responsibility for themselves, and they continued to require supervision. During the 8 month follow-up interval, no further significant change occurred. After 20 months, only 3 experimental group patients were outside the hospital. Thus the experimental group lost its apparent advantage over the control group. The number of experimental group patients placed outside a hospital at termination may reflect the therapeutic enthusiasm of the participants. The patients' relatives may also have contributed to this enthusiasm, as well as gaining a greater acceptance of the patients' pathological behavior. The lack of any sustained improvement over a prolonged period led to their return to the hospital.

In observations of clinical changes in the experimental group, it was impressive that the accessory schizophrenic symptoms, as defined by Bleuler(3), improved somewhat, while the fundamental symptoms remained relatively intact. Such accessory symptoms as hallucinations, delusions, and hypochondriasis were reduced. The patients tended to block less often in their verbal productions, and related much better in interpersonal situations. Improvement was apparent in disturbed behavior patterns and catatonic symptoms. Thus some of the

social isolation of these patients was overcome, but the fundamental schizephrenic symptoms persisted, particularly the disturbances in the associations and affectivity.

An interesting feature evident in these patients was the periodicity of the symptomatology. Over several months, some patients improved, then maintained their. improvement for a few weeks or months, only to relapse again into severe schizophrenic psychopathology. At times it was possible to relate such a relapse to certain specific stimuli, such as a traumatic visit home with the patient's family. Certainly the patients were very sensitive to any type of situational stress. This marked sensitivity toward stress has tremendous significance in any attempt at rehabilitation, since return to society necessitates a capacity to tolerate a number of stresses from which the patients have isolated themselves successfully by their illness and their hospitalization.

In having both sexes function together in most of their activities in the experimental setting, a number of significant patterns of sexual behavior were observed. Autoerotic behavior, genital exhibitionism, and overt masturbation occurred rather infrequently compared with the attempts at establishing object relations. Patients enjoyed holding hands, embracing one another in certain situations, kissing, fondling, and other types of sexual advances. These occurred in a very impulsive fashion; for example, some patients would go from one to another patient, kissing and fondling, often not differentiating one sex from the

TABLE 4
Disposition and Follow-Up of Patients

T	• Hospitalized	Family Care 1		va, escent tct3s 1
Experimental Group				
. At Termination	14	· 5		1
8 Months Later	, 13	5	•	2
20 Months Later	17	0		3
Control Group			•	
At Termination	19 ,	1		0.
8 Months Later	18	2 •	1	0
20 Months Later	17	1		2

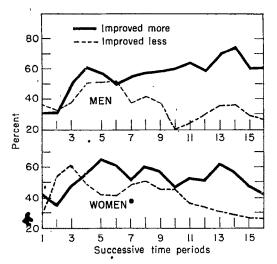
<sup>1</sup> Family care and convalescent status are dependent on improvement in behavior, but not necessarily on any change in basic psychopathology.

other. Most of this behavior was heterosexually rather than homosexually directed; in discussions with the patients they expressed pleasurable feelings about it. Poor judgment was evident in their expression of such behavior, and they had little understanding of social attitudes toward their impulsive sexuality. Most of the sexual behavior was of a tactile and oral type. Although patients attempted genital stimulation, such behavior was prohibited in the atmosphere of the hospital. These observations illustrate that sexuality in the schizophrenic patient is not totally repressed nor solely narcissistic, but that attempts at some type of primitive object relation occur.

That the ability to engage in heterosexual contacts bears some relation to amount of improvement shown by experimental group patients is evidenced by Figure 1, which shows the course of heterosexual associations at meal times for men and women, divided into those who improved more and less. At the state hospital, opportunities for any heterosexual relationships were very limited, and particularly so for the men, since for the most part they had male doctors and attendants. In view of this previous history, it is interesting that for both sexes, but particularly strikingly for the men, the "improved more" patients showed in general a consistently

#### FIGURE 1

HETEROSEXUAL ASSOCIATION AT MEALS IN RELATION TO IMPROVEMENT AT TERMINATION



greater number of heterosexual associations at meals. For the men who improved more, there was a steady rise in heterosexual associations during the 8 months covered, beginning at about 30% and increasing to from 60% to 75% of such associations. For both the men and the women who improved less, there was a fairly steady dropping off in heterosexual associations in the last 4 months of the project, with both these groups ending at about 30% of such associations.

A number of personnel problems were manifest in this study. It is interesting to note that the majority of the personnel in the experimental situation were Negro, while the patients were all white. The effect of this racial difference was not measured, but it seems reasonable to speculate that it would make for greater difficulty in establishing close interpersonal relations between staff and patients.

Many of the nurses and attendants lacked a suitable background of education or experience for much of the work required. Throughout the project the personnel were asked to assume greater responsibility for the management and treatment of the patients, and to attempt to establish a close relationship with them, in spite of the patients' hostile isolation. Initially the personnel showed tremendous enthusiasm, but with the many frustrations involved much. of this enthusiasm waned. It was apparent from the study that psychiatric nursing practices are poorly defined, and that nursing personnel are often confused in their work with patients. Status problems were created by the attempt to give a more therapeutic role to the nursing personnel; this factor may have limited their influence on the patients. The research ward staff had greater prestige and status in terms of the additional role in which they functioned, but this role required a greater responsibility and in many ways a reduction of the distance between personnel and patients. The aloofness often maintained by nursing personnel had to be overcome, and in this process insecurity feelings were often evident. With such frustrations and feelings, individual personal problems of staff members were intensified. This led to undue emphasis on many insignificant aspects of

ward operations, with fewer attempts at active interpersonal contact with patients.

From the viewpoint of effects on the basic schizophrenic psychopathology, the results of this study were not encouraging. The practical application of these specific techniques to larger chronic schizophrenic populations, such as those in state mental institutions, does not seem warranted in view of the limited improvement seen in the accessory symptoms, the large numbers of personnel and special facilities needed, and the associated high financial expenditures. As far as this study has demonstrated, modifications of hospital culture have little or no impact on the basic schizophrenic psychopathology of chronically disturbed patients, and other approaches to the solution of the problem must be sought.

These results do not preclude the possibility that intensive socialization techniques are beneficial to many psychiatric disorders, including schizophrenia, particularly during its early manifestations when there is a greater chance for reversibility of the process. This problem was not evaluated in the present study. The results merely emphasize the limitations of socialization programming in attacking the basic psychopathology of the chronic schizophrenic patient and in effecting consistently satisfactory treatment results.

#### SUMMARY AND CONCLUSIONS

A description has been given of a rehabilitation research project for chronic disturbed schizophrenic patients who had been hospitalized on the average for about 7 years.

In the experimental group a modification was seen in many of the accessory symptoms of schizophrenia, such as disturbed behavior, celusions, hallucinations, muteness, and withdrawal; these changes allowed a tenuous type of socialization. The fundamental symptoms of schizophrenia, the disturbances in associations and affectivity, remained. The control group demonstrated essentially no change. Follow-up evaluations of the hospitalization status of both groups 8 and 20 months after termination of the study showed almost no further changes.

In the process of resocialization of the chronic schizophrenic patient, a primitive type of sexual object relation occurs, manifested in both homosexual and heterosexual behavior. It is suggested that patients who can engage more in heterosexual contacts when these are available, are more likely to show a generally improved social adjustment.

The changes observed were considered to be of limited therapeutic significance in view of the numbers of personnel involved, special facilities, and resultant costs for such a program. Further limitations influencing the practical aspects are the difficulties experienced by personnel interacting in a close relationship with chronic schizophrenic patients. These include adverse personal reactions, status problems, and difficulties in maintaining a consistent interest in the project.

It may be concluded that in the schizophrenic illness, the accessory symptomatology is related in part to psychocultural factors and can therefore be modified by socialization techniques, as described in this study.

#### BIBLIOGRAPHY

- 1. Arieti, S.: Interpretation of Schizoplrenia. New York: Robert Brunner, 1955.
- 2. Bateman, J. F., and Dunham, H. W.: Am. J. Psychiat., 105: 445, 1948.
- 3. Bleuler, E.: Dementia Praecox or the Group of Schizophrenias, trans. by Zinkin, J. New York: International Universities Eress, 1950.
- 4. Cameron, N.: The Psychology of Behavior Disorders. Boston: Houghton Mafflin Co., 1947.
- 5. Dunham, H. W., and Weinberg S. K.: The Culture of the Mental Hospital. Detoit: Wayne State University Press, 1960.
- 6. Dutton, C. E.: An Investigation of the Internal Consistency and Validity of the Hospital Adjustment Scale, Dissertation Abstr., 13:589, 1953.
- 7. Faris, R. E. L.: Social Disorganization, (2nd ed.). New York: Ronald, 1955.
- 8. Frank, J. D.: Group Psychotherapy with Chronic Hospitalized Schizophrenics, in Psychotherapy with Schizophrenics, ed. by Brody, E. B., and Redlich, F. C. New York: International Universities Press, 1952, pp. 216-230.
  - 9. Greenblatt, M., Levinson, D. J., and

Williams, R. H. (Eds.): The Patient and the Mental Hospital. Glencoe, Ill.: Free Press, \$957.

- 10. Greenblatt, M., York, R. H., and Brown, E. L.: From Custodial to Therapeutic Patient Care in Mental Hospitals. New York: Russell Sage, 1955.
- 11. Jones, M.: The Therapeutic Community. New York: Basic Books, 1953.
- 12. McReynolds, P., Ballachey, E., and Ferguson, J. T.: Amer. Psychologist, 7: 340, 1952.
- 13. Malamud, W., and Sands, S. L.: Am. J. Psychiat., 104: 231, 1947.
- 14. Myerson, A.: Am. J. Psychiat., 95: 1197, 1939.
- 15. Schwartz, Charlotte G.: Rehabilitation of Mental Hospital Patients, Public Health Monogr. No 17, 1953.
- 16. Stanton, A. H., and Schwartz, M. S.: The Mental Hospital. New York: Basic Books, 1954.
- 17. Weinberg, S. K.: Amer. Sociol. Rev., 15: 600, 1950.

# A CORRELATION OF SYMBOL ORGANIZATION WITH BRAIN FUNCTION (EEG)<sup>1</sup>

#### ROBERT COHN, M.D.2

When physical changes of the environment operate on the sensing organs of the body, patterned impulses are impressed on the more central receiving systems to generate psychophysiological information that something has happened. Although sense data are obviously derived in a space-time continuum, the necessary repetitions and reinforcements of sense data as evidenced in "learning" prior to recognition of "significant" activity, actually tend to divorce sense data from the particularity of time. Consequently sense data appear to be of the dimensions of space. This conforms to the idea of spatial organization being paramount in discriminative brain function. Because these sense data cannot generate in the brain an exact replication of the physical excitants, the transmitted data must be patterned in such a way that the brain receiving mechanisms recognize the recurrent impulses. In that recognition must result from a coded action, it, therefore, must be an abstraction of the physical changes; I would like to designate this perceptual phenomenon as a first order symbolic process.

Inference(1), which connotes the role of indirect, impersonal determinants of behavior assumes two major forms; 1. Representational and 2. Non-representational.

In this paper the representational mode is designated as a second order symbol. Such second order symbols are exampled by picture or sound forms which through convention, or gross two- or three-dimensional similarity to the physical data, present to the brain material that evokes, or may potentially evoke, behavior just as if the physical elements themselves had been presented. Thus, although the symbol of water in a picture has not the property of wetness, fluidity, and mass, it nevertheless conveys

ment with all the properties noted above, and which under certain conditions is able to generate behavior just as if the actual water were present.

When the symbol processes become sufficiently non-representational so that they in no way convey a paradigm of the physical data for which they are a token, a new level of symbolization is achieved; these I will designate as higher order symbolization processes. This higher order, abstract behavior operator may be best demonstrated in the evolution of written languages, in which the earlier representational anatomical part, or other common objects of the environment became generalized to form marks divested of analogs of their origin.

Thus, through direct sense data, and inferences derived indirectly through reactivation of remote experiential data and through higher order symbol operations, the organism is made aware of its existence. This existence is thus derived through the process of symbol formation and symbol transformation.

One facet of the second and higher order symbolization processes is brought under consideration here: the drawing of the human figure. The use of the pictorial form of man carries with it an inherent element of uncertainty. This uncertainty results from the inability to weight the relative content of the representational and higher order symbols in any particular portrayal. Even in the simplest presentation, the representation component is manifest in, at least, composition. To accentuate this basic uncertainty, any elementary part of the depiction may be construed as a second or higher order symbolization depending on the sophistication of the observer. Despite these fundamental problems, the study of picture drawing affords information as to the process of symbol formation, symbol use, and symbol dissolution.

It has been observed that the spontaneous pictorial production in many 3½-year-old

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> U. S. Naval Hospital, National Naval Medical Center, Bethesca, Md.

children may be bizarre with little evidence of representation of the human figure, even in elementary composition. To a high degree this appears to be the result of an inability to order volitionally the parts in a sequential way.

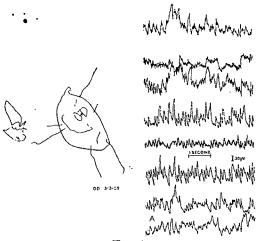
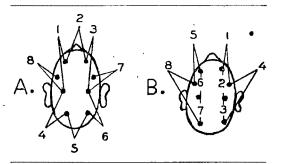


Fig. 1 Spontaneous picture (left), Picture drawn to dictation (right).

In Figure 1, the picture to the left, drawn by a child of 3½ years, constitutes the spontaneous "picture of a girl." Real effort was expended; the child named several face parts as she made incomplete, complex drawings. The picture to the right was the result of dictation; here each part was given to her by name in the following 'order: head, eyes, ears, legs, belly, arms, nose, mouth, and hair. It is observed that the whole person is encompassed in a closed space symbolized as "head." This output, of course, is similar to the normal production of a child of the age range between 31/2 and 5½ years. This portrayal is of particular interest in that this child, as most children of this age group, can correctly point to all body parts when asked to do so from a two-dimensional manikin. Such command productions strongly suggest that the child has a much better organized body image concept than would be gleaned from the spontaneous formulation. It is of interest also, as seen in the figure, that the electric 3 output of the brain in these children generally is not well organized when compared with adult records.



That the form of the child's picture of a person may be quite independent of a particular culture is shown in Figure 2.



Fig. 2

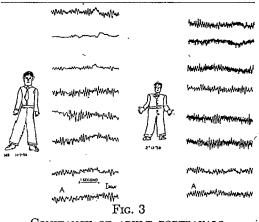
Picture obtained from Lacandonian
Indian boy, age 6 years.

This picture was drawn by a 6-year-old Lacandonian Indian boy from Chiapas, Mexico, who had only been out of the jungle for approximately 4 months. Because of bilateral congenital cataracts, the boy was not observed to indulge in spontaneous graphic expression, nevertheless the accomplished picture, in all ways, is

<sup>&</sup>lt;sup>3</sup> Electrode Placement: The number corresponds to tracing line. Top line is number 1.

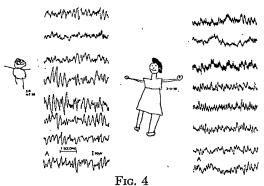
consistent with the average child's production of the same age in our own culture.

It has been observed that the pictorial presentation in the normal adult individual is remarkably constant. This is shown in Figure 3. The picture on the left was pro-



CONSTANCY OF ADULT PORTRAYALS.

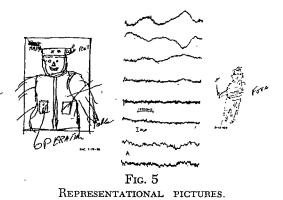
duced in 1955; that on the right was made in 1959. The contours and general composition are remarkably similar. The EEGs and neurological examinations were in no way remarkable. In other drawings, it is also observed that despite various distortions of the picture during the phases of most disturbed brain function, the basic contours and compositions retain their characteristics in serial portrayals. In children this conservatism does not prevail. This is demonstrated in Figure 4, where, in the course of one year, a portrayal may change from a child's type to that of the



MATURATION OF PICTURE DRAWING WITHIN ONE YEAR, ALSO "MATURATION" OF EEG PATTERN.

adult pattern. The EEG may mature in a similar way.

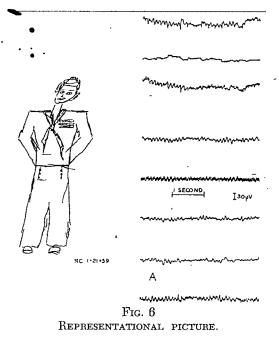
In the adult, it is a common, but not an invariable phenomenon, that behavioral attributes are manifest in the depictions of the human form. Such depictions are particularly evident during stress situations (Figure 5).



The patient was a Captain in the Navy who on retirement was elevated to the rank of Rear Admiral. Approximately one month prior to examination he sustained a possible fracture of the middle cervical vertebrae. He was placed in traction by means of Crutchfield tongs and then immobilized in a body-head cast that extended from the pelvic level to the top of his head; openings were allowed for the crown of the head, the ears, face, and arms. Within a few days following this restrictive immobilization, he began to hallucinate, to indulge in mysterious Morse code messages, and to engage in a rambling continuous type of verbalization.

The spontaneous picture production at this time was certainly representative of his plaster uniform. It will also be observed that he placed his two stars over the upper part of the symbol of the cast. In such productions, there is little doubt of "self" portrayal. The EEG showed no gross abnormality. The depiction to the right is from the same patient 7 weeks later. This production occurred in a phase of "recovery"; he spoke in a low tone of voice and was entirely logical in all verbalizations. He discussed his family and his imminent discharge from the hospital. It is observed that the delineations are incomplete, perseverative and that little pressure is exerted with the pencil. He was obviously very introspective and quite illat-ease.

The representational quality of picture production is also evident in the large number of neurologically normal subjects at this hospital who portray uniformed persons (Figure 6). No significant EEG

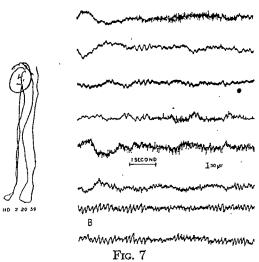


findings are evident in the excerpt of this particular subject.

The common factors in the above types of production which have been illustrated are: (a) the presence of sentient brain organization; (b) the retention of instrumentalities to accomplish the pictorial operation.

Acute unilateral lesions of the central visual apparatus, involving the geniculo-cortical pathway, generally result in remarkable asymmetric distortions of the person symbol (see Figure 7).

The patient was 65 years old. Approximately 10 days prior to study, he was working as a watchman when he suddenly became unable to stand. He did not lose consciousness, nor did he complain of headache. On examination he maintained conjugate gaze to the right; there was a left homonymous hemianopia. In reading the word "Chester," he saw only the "ter" and read "Peter." He discussed his aspirations and his concern about his ability to achieve them. While speaking, he often showed forced crying. There was no evidence of denial of illness despite an almost hemianesthetic

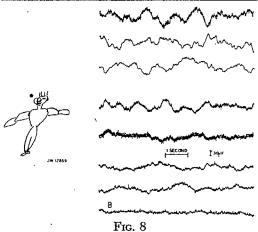


Depiction with left homonymous visual field defect.

left side; position sense of the upper extremity was absent even at the elbow joint. The reflex pattern on the left side was indicative of pyramidal motor system involvement. The picture showed a head element with attached lower extremities abutted in a disconnected way on the right side of his drawing; although the eyes were omitted, an attempt was made to place hair on the head. The EEG showed slow activity in the post-rolandic derivations of the right brain.

Another case of the effect of visual field disturbance is shown in Figure 8.

This patient was 20 years of age. Three months prior to the examination he had a strep-



FACE AND HEAD DISTORTIONS IN LEFT HOMONYMOUS HEMIANOPIA.

tococcal meningitis; he apparently recovered but later developed signs indicative of a brain abscess. Following the abscess evacuation, a spastic left hemiplegia including the face ensued. On examination he complained of generalized head pain. Speech was ideationally and mechanically intact. Over the left side epicritic sensation function was decreased, but position sense was disturbed severely in both the upper and lower extremities. Localization of areas of cutaneous stimulation was markedly impaired. The deep tendon reflexes were hyperactive on the left, but no Babinski sign was elicited. A left homonymous hemianopia was observed; however, he seemed aware of the left space. The picture drawing showed a simplicity of composition, but was noteworthy because of the displacement of face parts and head appendages on the left side of the portrayal (his left visual field). The EEG showed an intense slow wave output over the right cerebral hemisphere.

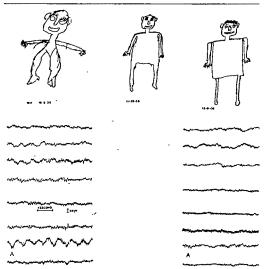
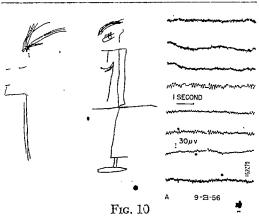


Fig. 9
Distortion associated with brain abscess (right temporal region). Note similarity of face features.

Figure 9 is the production of a 35-year-old man who 3 months previously had a right mastoidectomy. He was oriented for time; no right-left confusion or disturbed space concepts were elicited. He yawned repeatedly and complained of a severe headache over the right eye and temporal region. The left eyeground showed papilledema with hemorrhage. The right pupil measured 4mm. and the left 3½ mm. in diameter; they responded to light and in convergence. A tennis ball was called a "rubber

ball" in the left hand; in the right hand, the ball was named correctly. The persistence time to pin prick was increased, and the adaptation to pin prick was more rapid over the left side. The deep tendon reflexes were approximately equal. No Babinski signs were elicited, but abortive ankle clonus was more marked on the left side. His first picture drawing (left) consisted of a remarkably disproportioned relescoped individual; the extremities were approximated to the body in a rough way. The delineations were perseverative. The EEG showed prominent slow activity over the left temporal region.

Following surgery for the evacuation of a brain abscess he maintained an mmobile facies; he had difficulty in recognizing the spoken word. His speech was monotonous. He named colored objects applied in each lateral field of vision. The papilledema had receded. The face showed asymmetry in static and dynamic action on the right side. His tengue deviated to the left when protruded. There was reduced perception of the big toe position on the left, and the deep tendon reflexes were increased in amplitude on the same side. On December 8, 1958, it was observed that the left homonymous visual fields were non-functional. The right face was still less mebile than the left. Occasionally the left leg indulged in spontaneous clonic activity. There was marked reaction to cold when applied over the entire left side of the body. This patient's picture drawing was symmetric, but the lines were dystaxic and perseverative. Despite the obviously different compositions of the 3 pictures, the mouthparts, evelashes, eyes, anc ear formations are similar in each production. The EEG had returned to an essentially normal type by the time of the third picture.



DISTORTION IN PICTURE WITH LEFT HOMONYMOUS HEMI-INATTENTION.

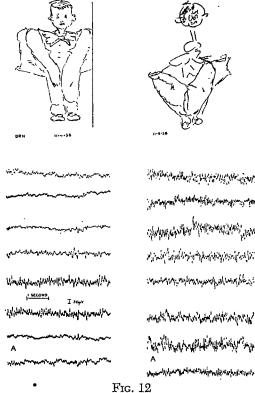
Figure 10 was obtained from a 63-year-old man who awakened with clumsiness of the extremities of the left side on September 3, 1956. At no time was there headache. Speech was ideationally and mechanically adequate. There was no denial of illness. There was hemi-inattention in the left fields of vision with simultaneously applied objects in the temporal visual fields. He failed to resolve homolateral double simultaneously applied cutaneous stimuli on the left side. Position sense of the digits of the upper and lower extremities was disturbed. The maximal left-sided weakness of the extremities was in the proximal elements. Deep tendon reflexes were increased in amplitude over the left side. No Babinski signs were elicited.

The picture drawings showed a modified incomplete profile. The parts of the left visual field were omitted. Perseverative delineation was also evident. The EEG output was dominated by 6 and 7½ per second activity.

On January 30, 1959 the patient was again studied; he remembered his previous visit. He walked in a slow insecure way; there was a reduced amount of associated movement of the right upper extremity. He spoke rapidly, ap-

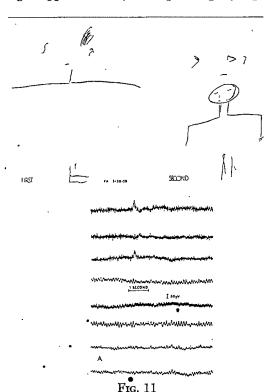
parently to retain the contextual thread. The left visual field inattention persisted as he occasionally was surprised to "see his left hand come into view." The picture production, Figure 11, is remarkably similar to that observed previously. The 7 per second activity of the EEG is somewhat more prevalent than in the earlier tracing.

In toxic states the distortions in the pictorial representations are general in distribution. The distortions may consist in varying degrees of combinations, of exaggeration of parts, grotesqueness of composition, of telescoping, or of perservation of the delineations.



• Fig. 12
Spontaneous picture (left).
Effect of alcoholic intoxication (right).

Figure 12 was obtained from a 30-year-old officer who shortly after reporting for active duty had a witnessed grand mal seizure. On neurological examination no gross abnormalities were observed. His picture was of a stylized "angelic" type (left) but aside from failure to plan for the edge of the paper on the right the picture was symmetrical. The



Same patient as in preceding figure two years and four months later. Note similarity of depictions.

picture on the right was obtained 2 days later after the patient had admitted in a mushy voice that he had been a "naughty boy while on liberty." The EEG was composed of 12 to 14 per second activity; Bogans test for alcohol was estimated as 1.5 mg./cc. of blood. His picture at this time, although similar in contour and design to the previous one, was poorly organized, disconnected, and linearly perserverative. Within 10 minutes after drawing the picture he became unaware of the environment. Corneal stimulation resulted in no responses; there was no withdrawal from pin prick or deep pressure.

In vascular lesions that do not involve the visual apparatus, the picture production shows a generalized distortion and simplicity of pattern (Figure 13, left).

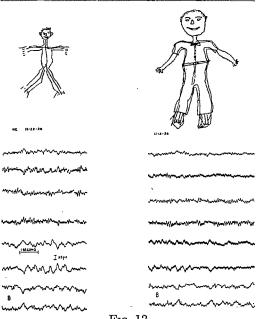


Fig. 13
Acute cerebral vascular accident (left).
Moderate recovery (right).
Note skeletal design in each figure.

An example is afforded by a 35-year-old man who had a sudden onset of right hemiparesis and a voluble jargon aphasia. There was difficulty in comprehending the written or spoken word. Only occasionally was a right-left confusion observed. Dynamically the right face was flat. In sensory function the major defects were in position sense, two-point discrimination, stereognosis and failure to resolve double simultaneously applied cutaneous stimuli.

There was a Babinski sign and hyperactive deep tendon reflexes on the right. His picture was formed from a stick figure with unusually applied digits. The EEG showed high voltage, 3 to 5 per second waves dominating the left brain output.

At the time of the drawing on the right of Figure 13, the patient was able to walk. When his speech became garbled he was now able to write his wants. He proved to be much more effective on this visit. Although his picture was better organized, he still utilized the transparency technique. The slow output of the EEG was much reduced in prominence.

From the data it appears that the picture drawing fluctuates between a second and higher order symbol as earlier defined The picture produced, however, appears to be more of a higher order symbol than a pure representation. This derives from the fact that usually in only one or two elements of any given picture in this series, is a dominant characteristic of the individual portrayed. Also it appears that classical representation requires an innate compulsion to render, or reproduce, the object in a "perfect" form, or as an abstraction of the perfect form. The crudest drawing and the most acclaimed picture are symbols with but varying qualities of perfection of rendering.

#### SUMMARY AND CONCLUSION

My thesis is that the more related the replication is to the sense data, the lower is the order of symbolization. Consequently, irrespective of the complexity and meanings of the subject matter, as perfection in rendition is accomplished, the lower the order of symbol portrayed. In this sense the natural development of artistic forms is in non-representational geometric and surrealistic symbols. This logic induces a paradoxical situation. Are the scribbled delineations of the child, and anthropoids, high order symbols? Certainly the child's scribbles do not have representational value. This potential paradox is resolved when it can be demonstrated that the scriboling has very little, or no, second order symbol value to the child. This major point is elucidated by asking the child to point out, after the scribbling, even if he has named anatomical parts during the production, the various components. This is hardly ever accomplished correctly, even when there is only little time delay from the scribble to the interrogation. If the time delay is long and/or the picture rotated, the child cannot point out the body parts he has named in his scribbled display, but he can easily do this from a conventional two-dimensional manikin. As a consequence it appears that the scribble constitutes a mark without particulate, or general, symbolic value.

Further evidence that the picture drawing is an individual symbol of a person, and not necessarily a representation of the body image concept, is the fact that irrespective of the vicissitudes of brain function, in general, the major elements are faithfully reproduced, even when the composition is unilaterally or generally disturbed.

The specific, asymmetric distortions are a further point in favor of this concept. It seems very clear that these distortions when present are a manifestation of a disturbance in the instrumentalities; that is, the visual field is lost to the individual and consequently he displaces the elements in the blind field. A fruitful study might be the attempt to discover why some individuals with visual field defects do NOT portray asymmetric picture drawings.

It is of course, possible to discuss the presented data in the fabric of the body image concept, and its distortions. This, however, implies a one-to-one correspondence between the depictions and the body image concept. From my material, this direct correspondence is difficult to demonstrate. However, if material such as that comprising Figure 2 could be amplified and confirmed, the direct relation between body

image concept and depiction might be demonstrated. Irrespective, it is quite clear that the body image concept and the body depiction complex is not a process of physiological proprioception in the sense of spatial orientation of body parts. This derives from the fact that the blind child between the ages of 7 and 8 years (personal observations) is unable to present compositionally correct graphic or plastic forms of the human figure. As a consequence it appears that the graphically depicted human form is in high probability a visually learned and controlled symbol operation with only occasional perturbatory accretions emanating from volitional or nonvolitional expressions of annoying parts or conflictual feelings. Consequently, a direct operational approach through symbols has been emphasized and employed in this study of the portrayal of the human figure.

In conclusion, it is shown that by means of learned processes, basic symbols are formed that appear to be a conservative expression of a person. An attempt has been made to demonstrate that this symbol fluctuates in a representational (second order) and non-representational (higher order) behavior matrix. And finally, that in the presence of crippling lesions of the brain, either of a transient, or more fixed type, that the symbol is either distorted in part or in a general manner, depending on the nature of the brain lesion.

#### REFERENCE

1. Russell, Bertrand: Analysis of Matter. New York: Dover Publications, 1954.

#### SUBLIMINAL AND SUPRALIMINAL INFLUENCES ON DREAMS\*

#### CHARLES FISHER, Ph.D., M.D.<sup>2</sup>

This paper will report an attempt to investigate the role of several types of incidental or indifferent perceptual stimuli in the formation of dreams and to elucidate some of the cognitive processes involved in the incorporation of such stimuli into the dreams. The recent work on subliminal registration, or more especially the replications and confirmations of the classical Poetzl experiment (1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15), has shown that subliminal stimuli are utilized in the formation of the manifest content of dreams. This work indicates that there are aspects of perception that are related to the drives, unconscious wishes and primary thought processes, and contrary to psychoanalytic and other theories, perception as an ego function is not exclusively concerned with adaptation and reality testing.

There is one important place in Freud's theoretical structure where he came close to dealing with perception in these latter terms and that is in his formulation of the nature and function of day residues (7). Although he did not discuss day residues in relation to perception, he did stress the significance of transient, unnoticed or vaguely attended to impressions of the day in the construction of dreams. He came to the conclusion that dreams have a preference for taking up *unimportant details* of waking life. The wider implications of Freud's astute observation have recently begun to be recognized and are leading to the investigation of the influence of indifferent impressions, not only on the thought processes of altered states of consciousness, such as the dream or hallucination, but also on thought in the waking state.

When speaking of day residues, Freud freely intermingled the terms, trains of

thought, impression, experience, idea, memory, etc. He did not distinguish between these various mental processes and the external perceptual events that accompany. them. It has been proposed that the concept of the day residue needs to be expanded to include not only preconscious trains of thought, ideas, memories, etc., but also the sensory events that surround these psychic events and, for purposes of dream formation, especially the subliminal stimuli that are registered while they are going on. It is the sensory material, both preconscious and conscious, that is registered as memory trace, that appears to become the raw material for the dream and is utilized in the process of translation of the dream thoughts into plastic visual or other sensory images.

What exactly did Freud mean by an indifferent impression? He stated,

The unconscious prefers to weave its connections around preconscious impressions and ideas which are either indifferent and have thus had no attention paid to them, or have been rejected and have thus had attention promptly withdrawn from them (7).

Although Freud spoke of indifferent impressions as those to which no attention had been paid or from which attention was quickly withdrawn, he never clearly distinguished between impressions which reached awareness and those which remained entirely out of consciousness. Most of the types of impressions, experiences, trains of thought, etc., that he spoke about were consciously experienced, however fleetingly. Freud did not further pursue the leads suggested by his off-hand remarks about indifferent impressions nor consider the possibility that different kinds of incidental registrations might have different roles in the formation of dreams.

The following is a tentative classification of incidental registrations. First, there is the totally subliminal, incapable of entering consciousness by virtue of weak stimulus conditions. With this type there is no question of attention being involved because no amount of attention will bring about aware-

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadelphia, Pa., Apr. 27-May 1, 1959.

<sup>&</sup>lt;sup>2</sup> Department of Psychiatry, The Mount Sinai Hospital, New York, N. Y.

This research has been aided by a grant from the Foundations' Fund for Research in Psychiatry.

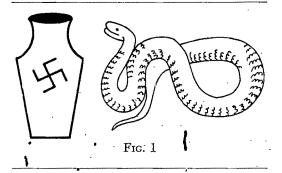
ness p nevertheless, registration and formation of a preconscious memory trace are assumed to take place. Second, there are percepts which are capable of entering consciousness, but do not do so because attention is not paid to them. Third, there are incidental impressions that reach consciousness fleetingly, that are weakly catheeted with attention or from which cathexis is quickly withdrawn. Fourth, there are supraliminal, focal, fully cathected perceptions which fall within the central focus of attention. Such supraliminal, focal percepts may or may not be indifferent, depending upon their meaning, intensity of affective charge and other conditions.

The completely subliminal stimulus may be considered an extreme example of what Freud called "an indifferent impression." Although the completely subliminal stimulus has been extensively investigated, the role of the supraliminal, focal stimulus in dream formation has not.

As I have stated, the present pilot investigation represents an attempt to study several of the types of visual registrations and percepts associated with day residues and to differentiate their respective roles in the formation of dreams. Specifically, the attempt was made to study the effect of the simultaneous presentation of a subliminal stimulus and a supraliminal, focal stimulus on subsequent dreams.

#### METHOD

Two visual stimuli (Fig. 1) were exposed



simultaneously through a tachistoscope. For 7 subjects, the stimulus picture shown on the right was made totally subliminal by drawing it in very light pencil lines while the stimulus picture on the left was made supraliminal by drawing it in very heavy inked lines. For 4 subjects, the reverse procedure was carried out; that is, the vase and swastika were made subliminal and the snake was made supraliminal. When either version of this slide is tachistoscopically exposed at 1/100 second, the subliminal stimulus cannot be discriminated, the recognition threshold for it being about % second. The supraliminal stimulus, however, is normally discriminated after one or two exposures at 1/100 second. It was assumed that the 2 stimuli become part of the sensory events incorporated into and forming a part of the complex experience we call a day residue.

The essential method used was the combined dream-imagery technique previously described (4). Briefly, the stimulus picture was exposed for 1/100 second at successive intervals until the vase, and particularly the swastika upon it, was successfully discriminated. After each exposure, the subject was required to draw what he had seen and to describe it verbally. The subject was then requested to bring in any dreams that he had during the night. The next day he reported his dream, made drawings of its significant pictorial elements, and then associated to the dream as freely as he was able. Following this, the stimulus picture was exposed for 1/100 second again and a series of 5 or more free images elicited. The subjects verbally described and made drawings of them. The stimulus was then re-exposed at successive intervals starting at 1/100 second, gradually increasing the time of exposure until the threshold of discrimination for the snake was determined. Finally, the subject re-examined his drawings for similarities to and correspondences with the stimulus picture.

It will be noted that both of these stimuli carry a highly affective charge and that they are sexual symbols in the psychoanalytic sense. The swastika on the vase could be thought of as an American Indian decoration but I was aware of the possibility that it remains for most people a highly charged configuration.

Of the 11 subjects used, 8, all male, were residents or other physicians of the experimenter's acquaintance; 2 were female patients on the Psychiatry Ward of Mount

Sinai Hospital, and one was a paid subject, by profession an actor.

#### RESULTS

I shall first present 2 dreams which occurred following the tachistoscopic exposure of the slide in which the vase was supraliminal and the snake subliminal.

Subject A had the following dream:

I was in a totalitarian prison camp in a room which they were trying to wire so they could listen in. There was a red-headed guy sitting in a chair. His name was Fisher. His arms were bare; they were shortish and bound down on the arms of the chair with Scotch tape. He did not seem too frightened. From his elbows to his hands, his arms were not as long as they should be. I said to him, "I'm resigning tomorrow from the concentration camp. Now I'm going to take my bullwhip," and I made a threatening gesture at him.

Associations: The Fisher in the dream was not you but an old friend of mine. I liked him because he was broad minded, and racially tolerant. Fisher's hands were not right. All that it took to hold his arms down was Scotch tape because they were so weak. I used to Scotch tape my own fingers together and then try to break loose in order to test my strength. The whole dream gives me a feeling of idiocy. I never in my life held a bullwhip. It was like acting in a play, as though Fisher knew that I was not threatening him; he did not appear frightened.

The subject made a drawing (Fig. 2) depicting himself threatening Fisher with the bullwhip. His image of himself was one of power and strength, as indicated by the very



Fig. 2

large biceps on the arm holding the bullwhip. He remarked that "the bullwhip had some coils, was black and made of some kind of living stuff like catgut. I think it's snake or snake hide. I've seen rattlesnakes of that consistency."

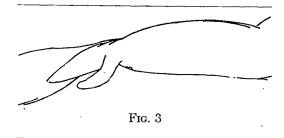
His associations to the remark, "I am resigning tomorrow from the concentration camp," were as follows: The phrase, "concentration camp" was a play on words related to the idea that I forced him to concentrate on the screen, and on his dreams. The idea of resigning had to do with his resentment at being in the position of a subject and his irritation at being forced to dream. The bed that was wired for listening in was associated to his fear of being forced to reveal his thoughts, and made him think of Orwell's "1984" and Big Brother. He stated that the Fisher in the dream must represent me.

During the re-exposure period, the subject compared his dream drawings with the stimulus picture. The subject felt that the concentration camp setting of the dream had been evoked by the swastika. He was extremely impressed by the resemblance between the bullwhip and the snake and by the fact that he had described the whip as made out of snake hide.

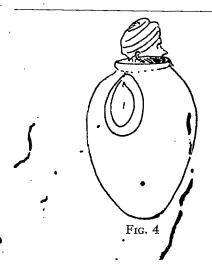
Interpretation: The latent content of the dream centers around the subject's unconscious conflicts having to do with the idea that he is weak or in a weak position by virtue of his status as an experimental subject and that I am strong and will dominate over him, force him to concentrate, to dream and to reveal his secret thoughts.

The dream expresses his aggressive wishes to reverse roles, to be in the strong dominating position and to place me in a submissive, weak one. The swastika stimulated a train of preconscious dream thought having to do with a concentration camp, representing his unconscious picture of the laboratory and the hospital. The central part of the dream relates to the red-headed man named Fisher, an extremely thin disguise for me, whom the subject threatens with a bullwhip. The idea of resigning expresses the subject's wish to run away from his role as a subject. It seems obvious that the subliminal percept of the snake was transformed in the dream into the bull whip made of snake hide. The idea of strength and weakness and domination and submission is depicted in the description of the arms of both parties to the conflict. Fisher's arms were weak and deformed, bound down with Scotch tape, while the image of the subject was that of a powerful figure with bulging biceps and the threatening bullwhip. Although the subject's aggression in the dream is quite apparent, it is disguised and toned down by his giving the dream scene a play quality, by making Fisher appear not to be frightened, by tying his arms down with Scotch tape that can easily be broken.

Following exposure of the same stimulus, Subject B had a dream in which the subliminal snake appeared to be transformed in the manifest content of the dream into the arm and hand of a man. The drawing of this image is shown in Fig. 3. During the re-exposure period,



the subject stated that the hand and arm on the right resembled the snake's head and proximal part of the body and he called attention especially to the correspondence between the thumb and the lower jaw of the snake. The analysis of the dream suggested that the arm and hand had symbolic phallic meaning and had assumed some of the pictorial characteristics of the snake. In the content of this dream, there were direct references to Jewishness and anti-Semitism.



It has been noted that Subject B gave evidence of symbolic phallic displacement to the arm and hand. This tendency to displace to the extremities was shown even more clearly in a free imagery experiment done subsequent to the dream experiment, utilizing the same stimulus at a time when the subject did not yet know the nature of the stimulus.

Fig. 4 was the subject's first image, showing one of the 40 thieves of Ali Baba hiding in a jug. Later, during the re-exposure period, the subject felt that the coils of the turban were transformations of the coils of the snake.

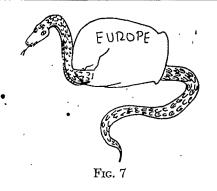
The second image (Fig. 5) was described



as an amphora with smoke coming out. The smoke became transformed into a genie. Note the sinuous, snake-like structure of the smoke. The subject stated that this image reminded



him of a mermaid which he used to draw a lot. Fig. 6 represents his image of the mermaid. He noted particularly the mermaid's scales,



which made him think of a snake, and he made the drawing shown in Fig. 7. He said that he used to make a lot of anti-Nazi drawings and this reminded him of a political cartoon. A snake is shown crawling through the vase, representing Europe, and bursting through its base. On the snake's head is a swastika. The cartoon illustrates the rape of Europe by the Nazis.

In this experiment, we see the gradual striking emergence of the percept of the snake, beginning with the coils of the turban in the first image, the sinuous, snakelike formation of the smoke in the second, the mermaid's scaly tail in the third, and finally, the almost photographic emergence of the snake in the last image. Aside from the breakthrough of the percept in this final image, the snake never appeared as such in the images or the dream, but was displaced and distorted in disguised ways to either the arms or the legs.

The following generalizations can be made about these 2 experiments:

1. In both, the subliminal snake did not appear as such in the dreams but was transformed, in the first instance into the bull-whip made of snake hide and in the second into the arm and hand. In both instances, the transformed image took on formal, pictorial properties of the stimulus picture; for example, the shape and composition of the bullwhip, and the formation of the hand which resembled the snake's head. Finally, in both dreams, the subliminal snake appears to have become associated with the most significant, most deeply repressed drive, wish-fulfilling aspect of the latent content of the dream.

2. In contrast, part of the supraliminal stimulus, namely, the swastika, did not ap-

pear in the dreams in *image* form as did the subliminal snake, but in both instances activated preconscious trains of thought. In the first dream, these related to a concentration camp, to ideas of force, Big Brother, being spied upon, *etc.*; in the second dream, to trains of thought relating to Jews, such as a verbal comment about anti-Semitism.

3. Although the transference aspects of the dream stimulated by the experimental situation are important factors in explaining the sexual and domination-submission themes, it was entirely possible that such content was reinforced by the nature of the two stimuli, namely, their meanings as male and female symbols. That such was the case is suggested by the data of the imagery experiment reported. Here, the symbolic sexual meaning of the vase and the snake appear to have been unconsciously cognized, the final image becoming a metaphorical representation of, "the rape of Europe."

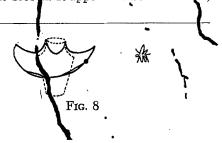
The following dream was elicited after the exposure of the *reversed* stimuli,  $i.\varepsilon.$ , in this instance the snake was supraliminal and the vase and swastika were subliminal.

Subject C dreamed:

I was at a dance in a very large hall. I found an object on the floor. It was either a brooch or a small antique. Dr. A was with me. As I was looking at the brooch, little mites came out of it and embedded themselves in the skin of my fingers and I became quite frightened. Wherever I would touch my hand these mites would embed themselves in my skin.

Associations: The dream was concerned with a fantasy punishment for forbidden sexual activities. The brooch appeared to be a female symbol and the mites that came out of it were associated with ideas of phallic contamination or injury as punishment for his sexual activities, with displacement to the fingers. This displacement was activated by the fact that the subject had recently developed a severe contact dermatitis on his fingers.

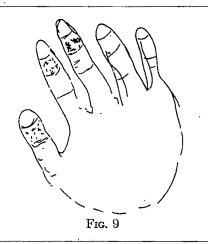
Fig. 8 shows on the left, the subject's crawing of the brooth. It appears to be a distorted,



flattened out transformation of the vase. If the brooch were stretched out and down it would very closely approximate the outline of the vase which I have superimposed in dotted lines upon it.

The drawing on the right represents one of the mites. Although it does not bear too striking a resemblance to the swastika, it does contain some of its formal elements and may have been derived from it.

The subject made another drawing (Fig. 9)



showing his hand with markings indicating the embedding mites. The markings on the middle finger contain clear-cut elements of the subliminal swastika, supporting the contention that the fleas represent a transformation and distortion of the subliminal stimulus.

In this experiment, the subliminal vase and swastika seem to have appeared in the 'manifest content of the dream in image form and associated with the repressed, drive organized, wish-fulfilling aspect of the dream in the same manner as the subliminal snake did in the first 2 experiments described. However, the supraliminal snake did not appear to bring about the same effects as the vase and swastika in the first two experiments when they were supraliminal. As a matter of fact, there was no indication of the presence of the snake either directly or in disguised or distorted form in the manifest content of the dream. It is possible, however, that it influenced the dream indirectly and by virtue of its symbolic meaning had something to do with the latent sexual content of the dream.

After the exposure of the supraliminal

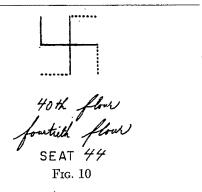
snake and the subliminal vase, Subject D had a dream which dealt with a Negro and involved anti-racial material. There is no evidence in the dream of the appearance of the swastika in image form. Instead, it seems to have activated preconscious trains of thought relating to racial matters in much the same way as it did when the stimulus was made supraliminal.

A somewhat different utilization of the subliminal swastika was shown in the results of 2 other subjects who were exposed to the reversed slide.

Subject E dreamed:

I was on the 40th floor of some building and was very scared of being up there. It did not seem as safe as the ordinary 40th floor of a building.

After reporting the dream, the subject wrote the words, "fourtieth flour" as shown in Fig. 10. It will be noted that both the words "four-



tieth" and "flour" were misspelled. By this misspelling, both the words were made to contain the word, "four." During the re-exposure period, the subject himself spontaneously pointed out that the swastika is made up of 4's as indicated in the figure.

Part of a second dream went as follows: "Several of us were going to a legitimate theatre. I had Seat 44." Again, during the reexposure, the subject felt that the 44 was derived from the swastika.

Subject F also transformed the subliminal swastika into "fours" in 2 dreams. One was about a shabby clock with "a 4 o'clock look." In these instances, the 4's represented transformations of the swastika.

As I have noted, in the dreams so far reported, when the snake was made supraliminal, there was no evidence of its emer! gence in either primary or secondary process form in the manifest content of the dream. However, in 2 of the dreams of Subject E, indirect evidence of the influence of the supraliminal stimulus could be detected. The subject had the following dream:

"There was a group of people standing around a guy who was going to open a wall safe and when he opened it secrets would come out. Everything that had been built up would be destroyed like the scandal in Connecticut where 6 men raped a teen-age girl and the mayor of the town committed suicide. They were all around for the opening. Then I was running out of the building, making a mad dash." The rest of the dream had to do with the subject's breaking into an old New England house, being pursued by and hiding from some man who was after him.

Associations: The old New England house made the subject think of his grandparents' farm house where he used to spend his summers when he was a small child. One summer when he was about 5, his uncles were cleaning out a well and killing snakes that were in it. One of them picked up a snake and threw it at him. He screamed and ran into the house. Ever since this traumatic experience, the subject has had an intense fear of snakes.

Interpretation: The evidence suggested that the group of people standing around waiting to open the wall safe and let the secrets come out was an indirect representation of the memory of his uncle removing snakes from the well and throwing one at him. The running away in a mad dash in the dream related to his running to the house in terror when his uncle threw the snake at him. It is of interest also that the "secrets" that were to come out of the well were associated with the scandal in Connecticut where 6 men committed rape on a teen-age girl. The subject's memory of his uncle and the snake was a perfectly conscious one, but was, in psychoanalytic terminology, a screen memory, that is, it screened a repressed group of fantasies that connected with his homosexual fears and wishes relating to the uncle. It may be noted that this subject had overt homosexual tendencies.

#### DISCUSSION

The results of the experiments reported confirm and extend Freud's formulations about the nature and function of indifferent impressions in dream formation. They can best be understood in terms of certain psychoanalytic propositions about the structure of memory organization. Rapaport (13), has suggested that memory schema are organized into constellations lavered in depth. The deepest level of repressed memories are organized around drives and have the quality of unconsciousness. This drive organization of memories is distinguished from a more superficial constellation, in terms of depth, which can be called the "conceptual organization of memories." This latter organization carries the quality of preconsciousness and is readily capable of becoming conscious. The drive organization of memories functions with mobile cathexes and primary process thought mechanisms, whereas the conceptual organization utilizes neutralized energy and functions according to the secondary process. Between the drive and conceptual organizations of memory it is assumed that there are transitional constellations which partake of the properties of both organizations.

The manner in which the perceptual stimuli were incorporated into the dreams in these experiments was highly complex and appeared to involve a number of factors. I initially thought that the subliminal stimulus resonated with the drive organizations of repressed memories, was subjected to primary process transformation and appeared in the manifest content of the dream in image form in relation to the latent unconscious wish fulfilling aspect of the dream, whereas the supraliminal stimulus appeared to activate preconscious trains of secondary process thought, direct derivatives of the stimulus emerging in the dream' in verbal, conceptual form. This formulation turned out to be only partially correct and a good many exceptions to it developed. At least 3, and probably more factors influence the manner in which the stimuli are handled by the dream work: 1) The degree of indifference of the stimulus, i.e., whether it is subliminal or supraliminal; 2 the meaning content of the stimulus; and 3) the person lity characteristics, conflicts and defensive operations of the subject.

1. The role of the degree of indifference of the stimulus. A stimulus, such as the swastika, when made supraliminal, generally becomes registered as memory trace in the conceptual organization of memory. There, it activates precenscious trains of thought

which are expressed in secondary process terms, mostly in verbal form, as opposed to representation through images. It appears to become recruited to reality attuned memory schema expressed in rational thought, and, therefore, is less suitable for use in expressing the drive, and unconscious, wish-fulfilling aspect of the dream. Thus, there appeared in the manifest content of the dream, direct derivatives of the swastika having to do with Nazis, concentration camps, prisons, barracks, Jew-Gentile, and other racial conflicts. These derivatives were logical and direct and of the same kind that one might have in the waking state.

In the majority of the experiments, both the snake and the vase and swastika, when made subliminal, appeared to resonate with the drive organization of memories, were more readily cathected by mobile id energies and unconscious wishes and more subject to primary process transformation. As opposed to the supraliminal focal stimulus, they appeared in the dream as indirect derivatives and in the form of visual images. Thus, the transformed image of the subliminal snake was used in the direct representation of a wish fulfillment as in the dream of the snake-like bullwhip. In the case of Subject C, the subliminal vase and swastika were transformed into the brooch and the embedding mites. Such derivatives of these stimuli are not of the kind that would ordinarily develop in the conscious waking state.

Although the stimuli, when made sub-'liminal, behaved for the most part as I have indicated, there were exceptions. The subliminal stimulus may be recruited either into the drive or conceptual organization of memories or into constellations that partake of both organizations. At the most primitive level, a fragmented derivative of the memory trace of the subliminal stimulus may appear in image form in the dream. In these instances, some formal pictorial or geometrical element of the stimulus will emerge divorced from the original meaning of the stimulus with a new meaning assigned. A good example would be the dream reported in which the swa tika was transformed into the number 4 or the dream in which it emerged as the embedding mites.

On a somewhat more complex level, the subliminal snake may appear in image form, the image modelled on the formal properties of the stimulus, but with certain conceptual elements added, for example, the bullwhip which had the strape of a snake but was said to be made of snake hide. The emergence of such an image implies some unconscious process of cognition so that the subliminal snake was recognized for what it was. At a still more complex level the subliminal stimulus may activate the conceptual organization of memories with the emergence of direct secondary process forms of thought; for example, the dream about the Negro. In this instance, we have to assume that unconscious recognition of the meaning of the swastika took place and that associated secondary process derivatives relating to racial conflicts appeared in the dream.

2. The role of the meaning content of the stimulus. In the dreams of the 4 subjects who were exposed to the supraliminal focal snake it became clear that the latter did not behave in the same way as the swastika when it was supraliminal. That is, it did not appear to have activated preconscious trains of secondary process thought. As a matter of fact, there was no evidence that it found direct representation in the manifest content of the dream in any form. It seemed that the fact that the stimulus was a snake was more important than the fact of its being supra- or subliminal. Since the snake is a highly charged phallic symbol, it is suitable to resonate with the drive organization of memories and latent unconscious wishes. There was, however, evidence in several of the dreams of Subject E that it did play a significant role in stimulating their latent content, although its influence was complex and indirect. It appears to have aroused certain conscious screen mem-ories, the latent content of these screen memories then being indirectly, in a disguised and distorted form, represented in the dream. The traumatic screen memory. concerned with snakes attained representation in one dream in the form of the wall safe and the secrets.

To summarize the rather conflicting da-

ta that I have described: In all the experiments, the swastika when made supraliminal, if it influenced the dream, did so by activating the conceptual organization of memory and appeared in secondary process form, never in primary process image form. When made subliminal, the swastika in some instances activated the drive organization of memories and in some, the conceptual organization. The snake, on the other hand, when made subliminal, always appeared to activate the drive organization of memories. When it was made supraliminal, however, it did not appear to activate the conceptual organization of memories. It did not find direct representation in the manifest dream either in verbal or pictorial form, but when it did influence the dream did so in a highly indirect manner, as in the instance of the activation of a screen memory.

3. The role of personality characteristics, conflicts and defensive operations of the subject: No systematic attempt has been made to investigate these factors but individual variations probably play a significant role, as Shevrin and Luborsky have recently demonstrated in their investigation of variations in the utilization of the defense mechanism of repression, and the influence of such individual differences on the results of the Poetzl experiment(15). The specific conflicts of the subject may also influence the manner in which various types of perceptual stimuli are utilized. For example, Subject E's reaction to the supraliminal snake may well have had something to do with the fact that he actually had a phobia for snakes.

#### Conclusion

This is a preliminary, exploratory, pilot investigation and the data have not been evaluated by objective methods. Although

it would be difficult to do this, we plan to make the attempt.

#### BIBLIOGRAPHY

- Dixon, N. F.: J. Abnorm. soc Psychol.,
   29, 1958.
- 2. Fisher, C.: J. Amer. Psa. Ass., 3: 389, 1954.
  - 3. Fisher, C.: J. Amer. Psa. Ass., 4: 1, 1956.
- 4. Fisher, C.: J. Amer. Psa. Ass., 5: 1, 1957.
- 5. Fisher, C., and Paul, I. H.: J. Amer. Psa. Ass., 7: 1, 1959.
- 6. Friedman, S. M., and Fisher, C: Further observations on primary modes of perception: the use of a masking technique for subliminal visual stimulation. J. Amer. Psa. Ass. In press.
- 7. Freud, S.: The interpretation of dreams (1900). Standard Edition, 4 & 5. London: Hogarth Press, 1953.
- 8. Klein, G. S.: Perception, motives, and personality: a clinical perspective. In: J. L. McCary (Ed.). Approaches to Fersonality. New York: Logos Press, 1956. Pp. 121-199.
- 9. Klein, G. S.: J. Amer. Psa. Ass., 7: 1, 1959.
- 10. Klein, G. S.: On subliminal activation. Presented at Symposium on the Social Scientist and Subliminal Stimulation at Annual Meeting, American Psychological Association, Washington, D. C., 1958. To be published.
- 11. Klein, G. S., Spence, D. P., Holt, R. R., and Gourevitch, S.: J. Abnorm, soc. Psychol., 57: 255, 1958.
- 12. Luborsky, L., and Shevrin, H.: Bull. Menninger Clin., 20: 135, 1953.
- 13. Rapaport, D., ed.: Organization and Pathology of Thought. New York: Columbia University Press, 1951.
- 14. Shevrin, H., and Luborsky, L.: J. Ab-norm. soc. Psychol., 56: 285, 1958
- 15. Shevrin, H., and Luborsky, L.: The disappearance of fleeting impressions as a function of repression. Presented at Joint Meeting of American Psychiatric Association and American Psychoanalytic Association. Panel on Experimental Studies in Perception: theoretical and clinical implications. Philadelphia, April, 1959.



## DIFFERENTIAL RESPONSES IN YOUNG VS. OLD ANIMALS TO TRAINING, CONFLICT, DRUGS AND BRAIN LESIONS 1, 2

ŭ,

#### CURTIS PECHTEL, Ph.D., JULES H. MASSERMAN, M.D., AND LOUIS AARONS, Ph.D.<sup>3</sup>

#### PRELIMINARY OBSERVATIONS

One female and 5 male kittens, 4 to 5 months old, and 1 male and 5 female rhesus monkeys, aged about 2 years, were rated daily for 8 to 12 months as to their individual and social behavior, their capacity to solve problems of discrimination and short-term memory presented in a specially designed apparatus, and their reactions to depressant and ataractic drugs. Our methods and apparatus were described in detail in previous reports (1, 2). In the present study, the animals were required to press the correct one of two levers in response to bell or light signals, to alternate between levers when no signal was given, and then to combine these patterns of response. In addition, the monkeys were required to discriminate direct object stimuli, delayed spatial cues, and pattern relationships in a modification of the Wisconsin General Testing Apparatus (3). The criteria and scales employed had been proved to be highly reliable in earlier studies(1).

Induction of Experimental Neuroses. As described previously (2), this was accomplished by subjecting the animals at irregular periods to 2 to 10 low-amperage high-voltage condenser shocks at the time of food-taking over a period of 3 to 15 weeks.

Cerebral Lesions. The neurotic kittens were observed for 11 to 13 months and the monkeys for 14 to 18 months, after which all of the animals were operated to produce the following bilateral lesions: in cats, 4 medial amygdalectomies and 2 mediodorsal thalamic ablations; in the monkeys, 3

total amygdalectomies, 2 frontal (Grantham equivalent) and 1 temporal ablations. The thalamic lesions were produced by Horsley-Clarke stereotactic electrolysis; the others, by open field operations.

#### RESULTS

Spontaneous Behavior. As can be seen from Table 1, the kittens took longer than older cats to achieve comparable ratings in establishing friendly relations with the experimenters, exploring the laboratory, feeding in the experimental apparatus, and trying the levers for activating conditional signals and securing the food rewards. In contrast, the adaptation of the young monkeys was approximately as rapid as that of the older pre-adolescent and adult animals when rated on comparable scales.

Lever Pressing. Table 1 indicates that the kittens took almost 5 times as long as older cats (average 110 days as compared to 21) to learn to press levers for food rewards 25 times in a 40-minute period. Similarly, the 6 young monkeys took an average of 66.5 days as opposed to means of 19 and 22.5 days for the older control groups.

Discrimination. Table 1 also shows that the young cats (a) took almost 3 times as long to acquire the initial auditory-visual differential responses and (b) performed with an accuracy of only 60% as opposed to the 80% or better of the older cats. The young monkeys also learned such discriminations more slowly than did adult monkeys (18 as opposed to 15 days) but about as well as the pre-adolescents. All three groups performed with comparable accuracy.

Neuroses. As the experimental neurosis generalized, all animals developed hyperreactivity to stimuli, tics, tremors, generalized phobias, disruptions of learned performance, resistance to being brought to the laboratory and, in the monkeys, digestive.

<sup>&</sup>lt;sup>1</sup> Read at the 115th annual meeting of The American Psychiatric Association, Philadel hia, Pa., Apr. 27-May 1, 1959.

Aided by Grant 1719 from the Psychiatric Training and Research Fund of the Illinois Department of Public Welfare, and Grant M-730 from the United States Public Health Service and Contract DA-49-007-MD-403 with the Office of the Surfeon General.

MD-703 with the Office of the Sur eon General.

3 Department of Neurology and Psychiatry, Northwestern University School of Medicine, Chicago, Ill.

### TABLE 1

#### Days Required for Adaptation to Laboratory Routine, Consistent Lever Pressing Behavior and Learning

Subjects	Adaptation to laboratory routine	Consistent Pressing of Levers *	Learning **	
			Time	Average Percentage of Accuracy
Adult Cats	Range 5-40 Mean 12	Range 1-70 Mean 21	Renge 5-45 Mean 20	80% or better
Kittens . ń=9	Range 20-70 • Meen lili	Range 30-180 Mean 110	Range 110 <b>–</b> 90 Mean 55	60,5
Post-Adolescent Konkeyz n=35	Range 5-30 Mean 11	Range 1-35 Mean 19	Range 5-30 Mean 15	30% or better
Pre-Adolescent Nonkeys (Est. 32-38 mos.) n=13	Range 5-30 Mean 10.5	Range 1-40 Nean 22.5	Range 5-40 Mean 19	80% or better
Pre-Adolescent Monkeys (Est. 24 mos.) n=6	Range 5-30 Mean 11	Range 20–90 Ngan 66.5	Range 5-35 Mean 18	80% or better

<sup>\*</sup> Days between the initial lever-press (required movement less than .10 inch under pressure of less than 1 ounce) for a food reward to correct manipulation of both levers 25 times within 40 minutes. No discrimination is involved in this step.

respiratory and other dysfunctions which persisted despite 7 to 17 months of retraining. However, in contrast to the adults of both species, the young animals continued to take food in the apparatus if it were made freely available and showed only mild inhibitions of their usual play and social behavior; moreover, the monkeys in particular retained their capacity to master discrimination techniques in a different apparatus.

Effects of Brain Lesions. Soon after amygdalectomy and until they were sacrificed 16 to 18 months later our kittens pursued other animals, regardless of sex, species or opposition, and persisted in mounting them for as long as two hours if permitted to do so; in contrast, this hypereroticism generally disappeared within 6 to 8 months in a control group of adult amygdalectomized cats(4). The 4 young monkeys with amygdaloid or temporal ablations were similarly hypererotic, whereas those with frontal ablations were more diffusely overactive.

However, in none of the young animals did the cerebral lesions immediately modify any established neurotic pattern; indeed, only after more than a year of intensive postoperative retraining was a modest decrease in hyper-reactivity and increased adaptation to the experimental apparatus effected. During the subsequent 13 to 16 months the young monkeys showed a reduction in startle and phobic responses, lessened hyper-reactivity, and a moderate increase of social interactions with their cage and colony mates; nevertheless, stereotyped motor behavior and apprehersion in the experimental apparatus persisted, and the animals failed to relearn problems they had previously mastered,

Effects of Daugs. Reservine in daily doses of .05 to .15 mg. and chlorprograzine in daily doses of 18 to 30 mg. were administered to our neurotic animals before and after operation. Neither drug produced more than a minimal and transient diminution in neurotic behavior in the kittens,

<sup>\*\*</sup> For simplicity, only the discrimination between bell and light signals is included here.

whereas somewhat marked and persistent benefits had been observed in 12 of 36 adult animals (1). Both young and old monkeys were even less amenable to drug therapy than were the cats.

#### Conclusions

A preliminary study of 6 kittens and 6 theres monkeys, approximately two years old, indicated that:

1. The kittens as compared to older cats adapted less well to laboratory routine and learned tasks of lever-pressing and audiovisual discrimination more slowly;

2. The young monkeys adapted to laboratory routine as well as the older ones but took more time to master the leverpressing; on the other hand, they learned a series of discrimination problems as quickly as did older pre-adolescents though again somewhat more slowly than adults;

3. The young animals readily developed neurotic patterns under the stress of adaptive conflict but these reactions, though resistant to 7 to 17 months of retraining, were much less generalized than those in adult controls;

- 4. Lesions in the amygdaloid and frontal areas induced heightened sexuality and general activity level respectively, but, despite 16 to 25 months of postoperative retraining, there was no (in cats) or little (in monkeys) amelioration of neurotic patterns in the young as compared with older animals:
- 5. Reserpine and chlorpromazine also produced only minimal and transient effects on the experimentally induced neurotic behavior.

#### **BIBLIOGRAPHY**

- 1. Masserman, J. H., and Pechtel, C.: APA Psychiat. Research Reports, 4: 95, 1956.
- 2. Masserman, J. H., and Pechtel, C.: Ann. N. Y. Acad. Sci., 56: 253, 1953.
- 3. Harlow, H. F.: Psychol. Rev., 56: 51, 1949.
- 4. Masserman, J. H., Levitt, M., McAvoy, T., Kling, A., and Pechtel, C.: Am. J. Psychiat., 115: 14, 1958.

# RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRANIL, GEIGY)

Mix 1 cc urine with 1 cc test solution\*, shake gently and read promptly against color chart:

#### Daily Drug Dose:

25-50 mg.

50-75 mg.

75-150 mg.

150-250 mg.









\*Test solution consists of:

25 parts 0.2% potassium dichromate solution

25 parts 30% sulfuric acid 25 parts 20% perchloric acid 25 parts 50% nitric acid

Absence of green color indicates a negative test.

Initially purple color, rapidly fading and followed by green color development means simultaneous presence of some phenothiazine drugs and Tofranil.

In the presence of large amounts of phenothiazine drugs, a more persistent purple reaction may be seen. In this case add one more cc of test solution, or perform the test immediately with 1 cc of urine and 2 cc of test solution for reliable demonstration of Tofranil.

#### CLINICAL NOTES

## A RAPID URINE COLOR TEST FOR IMIPRAMINE (TOFRĀNIL, GEIGY): SUPPLEMENTARY REPORT WITH COLOR CHART

IRENE S. FORREST, Ph.D., FRED M. FORREST, M.D., AND AARON S. MASON, M.D.<sup>1</sup>

In a recent report on a new reagent for the demonstration of urinary imipramine (1), we emphasized the importance of an objective test for actual drug intake, especially in the case of depressive patients who are frequently reluctant to ingest any type of medication.

The inexpensive test solution which may be prepared by any hospital pharmacy or laboratory, consists of the following: 25 parts 0.2% potassium dichromate solution

25 parts 30% sulfuric acid (by volume) 25 parts 20% perchloric acid (commercial

product)

25 parts 50% nitric acid (by volume).

The test is performed by placing 1 cc of urine in a test tube, adding 1 cc of test solution, shaking gently to obtain a homogeneous mixture, and reading immediately against the color chart. Prompt readings are especially necessary in the lowest dosage range (25-50 mg. Tofrānil daily) since the resulting pale olive color is of limited stability (15-25 seconds); higher drug doses yield color complexes of increased stability and color intensity, persisting for more than 60 seconds at the highest dosage level seen (250 mg. per day).

The color chart was compiled from over 1000 urine specimens containing Tofrānil, alone or in combination with other drugs. Approximately 250 determinations were used for each of the 4 dosage ranges. Each level of the chart represents the average reactions of at least 25 patients tested repeatedly on different days. The 4 color intensities of the chart comprise the pale olive (+) level, corresponding to daily drug doses of 25 to 50 mg., the light green (++) level for doses of 50 to 75 mg., the medium green (+++) level for 75 to 150 mg., and

the deep emerald green (++++) level for daily drug doses of 150 to 250 mg. The latter dose was the highest one seen in our laboratory.

Absence of green color indicates a negative test. In all urine specimens containing Tofranil, alone or in combination with other drugs, not a single false negative test was observed. As reported previously (1), trines containing imipramine and phenothiazine drugs simultaneously, will show an initial purple color reaction which fades rapidly and is followed by the characteristic green Tofrānil reaction. This is true for ratios of imipramine to phenothiazine compounds up to about 1:5, and for daily phenothiazine drug doses up to about 500 mg. In the presence of relatively high doses of phenothiazine compounds, e.g. in a combination of 50 mg. imipramine with 600 mg. chlorpromazine daily, the initial purple color may not fade within the usual 15 seconds and may camouflage the Tofranil reaction. In the presence of even higher amounts of phenothiazine drugs, actually all of the active color producing components of the ra-agent may be exhausted in the reaction with the phenothiazine compound. It is therefore advisable to perform the test in all these instances with 1 cc of urine and 2 cc of test solution to avoid any false negatives. This should be made standard procedure in the presence of daily phenothiazine drug doses of 400 mg. or more.

In 300 control urines free of drugs no false positive tests were encountered. In another series of 300 controls, containing all types of drugs with the exception of imipramine, 4 patients receiving large doses of multiple antitubercular medications showed "trace" reactions, i.e. false positive tests, somewhat below the (+) pale olive level of the color chart. This was found especially at peak excretion time of paraginin-

<sup>&</sup>lt;sup>1</sup> Respectively: Research Biochemist, Chief, Acute Service, and Director, Professional Services, V. A. Hospital, Backton, Mass.

osalicylic acid, 1 to 3 hours after administration of medication. These reactions differed from the lowest level Tofranil reactions by appearing with some delay, usually 20 to 40 seconds after addition of the reagent to the urine. Pure aqueous solutions of paraaminosalicylic acid up to concentrations of 1 mg. PAS<sub>a</sub>(sodium salt) per cc of water, showed no reaction with the Tofranil reagent in vitro, but higher concentrations, e.g. 10 mg. per cc, yielded a greenish color similar to the (+) level of the chart after 20 seconds. A small series of phenylketonuric urines<sup>2</sup> which yielded false positive tests with a number of phenothiazine test reagents (2-5) did not yield any false positive, i.e. green color reactions, with the Tofranil reagent, although test colors from orange to pink and purple were seen in these cases. In no instance among the 1.3% false positives encountered in the 300 control urines containing a variety of drugs, did the false posi-

tive reactions reach the (++) or higher levels of the chart. In view of this, the possibility of misinterpretations seems rather remote.

It was also found that the Tofrānil reagent could detect decreasing amounts of imipramine and/or metabolites for several days after discontinuation of the drug. In these cases an original (++) level, for instance, was found to drop to the (+) level within one or two days, with traces detectable for several days thereafter. An investigation of the urinary excretion pattern of the drug and the nature of its biological and chemically prepared metabolites is currently in progress.

#### **BIBLIOGRAPHY**

- 1. Forrest, I. S., and Forrest, F. M.: Am. J. Psychiat., 116: 840, 1960.
- 2. Forrest, F. M., Forrest, I. S., and Mason, A. S.: Am. J. Psychiat., 114: 931, 1958.
- 3. Forrest, F. M., Forrest, I. S., and Mason, A. S.: Am. J. Psychiat., 115: 1114, 1959.
- Forrest, F. M., Forrest, I. S., and Mason,
   A. S.: Am. J. Psychiat., 116: 549, 1959.
- 5. Forrest, I. S., and Forrest, F. M.: Clin. Chem., 6: 11, 1960.

#### REVERSIBILITY OF DRUG-INDUCED PARKINSONISM

#### ROBERT B. CAHAN, M.D., AND DAVID D. PARRISH, M.D.1

Symptoms of parkinsonism induced by Thorazine and Serpasil did not return in a majority of tested hospitalized patients after their anti-parkinson drugs were discontinued. Cogentin had been used from 3 to 16 months for symptoms of parkinsonism induced by Thorazine or Serpasil. In preparation for a proposed study of a new anti-parkinson agent, 34 patients had their Cogentin discontinued, remaining on their previously parkinsonizing dose of ataraxic. After 3 weeks only 6 patients had any return of their parkinsonism! After 8 months, none of the other 28 patients had developed parkinsonism. Perusal of the literature in order to ascertain whether this observation had been made and reported revealed only a few suggestive comments<sup>2</sup> but no specific statement.

In an attempt to confirm these observations, Artane and Cogentin were stopped in another series of patients with druginduced parkinsonism. Only 11 of 49 patients in the new series redeveloped any parkinson symptoms. One of these had been on Cogentin only 18 days, but another patient who had been on the drug for only 23 days had no return of symptoms. Some patients who had been on Artane for over two years had return of symptoms.

#### Discussion

Thus we have patients demonstrating 3 divisions of parkinsonian sensitivity to ataractic drugs: 1. The group which does not develop parkinsonism even with major amounts of the drugs (i.e., two grams of Thorazine daily); 2. Those patients who develop parkinsonism that will not relent even with temporary reduction of drug or an anti-parkinson agent; and, 3. Those

<sup>&</sup>lt;sup>2</sup> Phenylketonucic urines were obtained through the courtesy of the Paul A. Dever State School, Taunton, Mass.

A report on false positive phenothiazine tests obtained with these urines is in preparation.

<sup>1</sup> Nerristown State Hospital, Norristown, Pa.

<sup>&</sup>lt;sup>2</sup> Konchegul, Leon: Med. Annuals of the District of Columbia, Aug. 1958.

patients whose parkinsonism can be controlled by temporary reduction of the level of ataraxic or by *temporary* use of an anti-parkinson agent.

There are both practical and theoretical implications to this finding. The majority of patients with drug-induced parkinsonism, after a period, no longer need the antiparkinson drugs they are receiving. There is a potential saving in side-effects, time, effort, and money in withdrawing all patients with drug-induced parkinsonism after approximately two months of therapy with anti-parkinson drugs, restarting only those who redevelop symptoms. Our finding would indicate that approximately three-quarters no longer need such medication.

The theoretical aspects raise several questions on the nature of drug-induced parkinsonism, obviously different from postencephalitic or idiopathic forms of parkinsonism which do not relent after treatment.

Central synaptic transmission is dependent upon normal acetylcholine-cholinesterase activity. Since all of the recognized anti-parkinson agents are noted to have anti-cholinergic properties, one might speculate that the ataractic drugs temporarily impair the acetylcholine-cholinesterase equilibrium in the neostriatum and paleostriatum, and that this action is reversed by the anti-parkinson agents. Perhaps the anti-parkinson agents facilitate more normal synaptic transmission by increasing the cellular threshold to acetylcholine.

Any hypothesis should predicate the tissue's ability to gain permanent relief from toxic tremor and rigidity when the clinical symptoms are relieved but the toxic agent remains in the circulation. We are now observing the length of time necessary for development of the adaptive mechanism, and considering its mode of action.

#### RESPONSES OF TREATMENT-REFRACTORY CHRONIC SCHIZOPHRENICS TO CHLORPROMAZINE WITH CONCURRENT ADRENOCORTICAL STEROID <sup>1</sup>

#### KISIK KIM, M.D.<sup>2</sup>

It is generally accepted that overtly anxious schizophrenic patients are amenable to therapy, and one sign that characterizes the majority of treatment-refractory chronic schizophrenics is the lack of such anxiety.

Based on observations that the blood adrenocortical steroid level is elevated in anxiety states (3, 4), and that adrenocortical function is depressed in chronic schizophrenics (3), it was postulated that adrenal steroids (though apparently not therapeutic by themselves in schizophrenia (1, 2, 5, 6) might "activate" such patients, thus rendering them more responsive to presently available treatments.

This study was carried out to determine whether Aristocort, a biosynthetic adrenocortical steroid, would have beneficial effect on the response pattern of treatment-refractory chronic schizophrenics to chlorpromazine.

#### METHOD

Ten chronic schizophrenic patients at Norfolk State Hospital were selected on the basis of their records and clinical examinations and were divided into 2 matching groups of 5 patients each: an experimental and a control group.

There were 2 women and 3 men in each group. In the experimental group, the ages of the patients ranged from 37 to 52 years (mean 42.8 years), and length of current admission, from 4 to 25 years (mean 15.4 years). In the control group, the age range was from 33 to 49 years (mean 41.4 years), and current admission length from 10 to 28 years (mean 20.2 years).

The outstanding clinical features of these patients were: severe with rawal inertia, indifference to surroundings, flatness of af-

<sup>&</sup>lt;sup>1</sup> Aristocort triamcinolone (9 ∝ Fluoro 16 ∝ hydroxy prednisolone) and placebo were supplied by Lederle Company for this study.

<sup>&</sup>lt;sup>2</sup> Research Division, Nebraska Psychiatric Institute, and Dept. of Neurology & Psychiatry, University of Nebraska College of Medicine, Omaha, Neb.

fect, lack of outward anxiety, thought disorganization with delusions and hallucinations. None of the patients communicated spontaneously. All previous somatic treatments including chlorpromazine were ineffective in these patients.

The patients of the experimental group received chlorpromazine and Aristocort while those in the control group received chlorpromazine and Aristocort-placebo Doses were: chlorpromazine 200 mg.—400 mg./day, and Aristocort (or Aristocort-placebo) 8 mg.—16 mg./day. Medications were given 4 times a day for 3 weeks after which steroid was tapered off in one week. The Aristocort (or Aristocort-placebo) was given one hour before each chlorpromazine medication.

The "double blind" procedure was used and evaluation was based on the behavioral changes of the patients, observed daily by the ward attendants, research nurses and ward physicians. Each patient was also seen weekly by a physician in a more structured interview situation. Psychotherapy was not attempted.

#### RESULTS

Two patients of the experimental group, both women, showed a transient improvement consisting mainly of increased alertness to surroundings and better communicability. One of these spontaneously reported that she was "feeling better." The other showed a reduction in the degree of her delusional preoccupations and was able to communicate meaningfully.

One male patient of the control group showed a similar unsustained improvement in that he was able to participate in ward activities. Significant exacerbation of symtoms did not occur in any patient.

The medication of one male patient of the experimental group was discontinued on the 12th day of the study because of questionable findings on chest X-ray films and a persistent neutrophilic (segmented) granulocytosis of over 18,000 (a lesser degree of leucocytosis occurred in the remaining 4 patients of the experimental group).

Otherwise, no significant abnormalities of physiology were noted in the two groups.

In conclusion, adrenal steroid as given in this study seems at best only slightly beneficial in enhancing the responses of treatment-refractory chronic schizophrenics to chlorpromazine.

#### BIBLIOGRAPHY

- 1. Cohn, J. B., Karnosh, L. J., and Stecher, R. M.: Dis. Nerv. Syst., 12: 291, Oct. 1951.
- 2. Cranswick, E. H., and Hall, T. C.: Lancet, 1: 540, Mar. 25, 1950.
- 3. Freeman, H.: Adrenal Cortex in Schizophrenia, p. 202, in Schizophrenia: A Review of the Syndrome, Ed. Bellak, L., New York: Logos Press, 1958.
- 4. Persky, H., Grinker, R. R., Hamburg, D. A., Sabshin, M. A., Korchin, S. J., Basowitz, H., and Chevalier, J. A.: Arch. Neurol. Psychiat., 76: 549, Nov. 1956.
- 5. Polatin, P., Lesse, S., and Harris, M. H.: Arch. Neurol. Psychiat., 73: 485, May 1955.
- 6. Rees, L., and King, G. M.: J. Ment. Sc., 102: 155, Jan. 1956.

## EXPERIENCE WITH TRIFLUOPERAZINE IN THE TREATMENT OF 100 CHRONIC ANERGIC SCHIZOPHRENIC PATIENTS

#### LEON REZNIKOFF, M.D.1

One hundred chronic schizophrenic patients had been treated with trifluoperazine for a period of 3 to 12 months. The patients selected for this study were so-called chronic back ward patients predominantly so apathetic, resistive and withdrawn that it had been difficult to engage them in any ward activities.

<sup>1</sup> Clinical Director, Hudson County Hospital for Mental Diseases, Secaucus, N. J. A few of these patients would develop from time to time episodes of excitement during which they would become destructive and require either restraint or maintenance electric shock therapy.

These patients had been previously treated with shock therapy and numerous ataractic drugs, but either failed to maintain improvement, or relapsed soon after completion of therapy.

The group consisted of 58 males and 42 females, varying in age from 21 to 69 years. The average duration of psychosis was over 9 years.

The following types of schizophrenia were represented in the group: paranoid type, 52; catatonic, 11; hebephrenic, 12; chronic undifferentiated type, 13; schizoaffective, 8; simple type, 3; mixed type, 1.

Trifluoperazine was used in doses of 4 mg. to 40 mg. per day, although majority obtained maximum improvement on about 20 mg. per day, and required about 10 mg. per day as a maintenance dosage after improvement had been achieved. A few patients refused oral medication and had to be given it intramuscularly; however, after one week there had been no difficulty in using oral medication. Trifluoperazine was given twice a day.

One female patient, A.H., developed marked athetoid movements after only 3 days on 5 mg. b.i.d.; the movement stopped when she was given caffeine sodium benzoate 7½ grains intravenously, Artane by mouth and trifluoperazine discontinued temporarily; after another week she was started again on smaller doses of trifluoperazine (2 mg. b.i.d.) which was later increased to 2 mg. t.i.d., but she had no further difficulties.

Forty patients (15 male and 25 female) developed extrapyramidal system symptoms, which subsided when the dose of trifluoperazine had been diminished and Artane, Cogentin or Akineton had been added to the therapy. The last three drugs were equally effective in controlling the extrapyramidal manifestations.

There were no cases of jaundice, skin rash or agranulocytosis; slight leucopenia was observed in a few patients; blood counts have been made on these patients at weekly intervals, on others once a month; there was no significant drop in blood pressure, nor marked gain in weight.

A female patient who had been treated previously with large doses of chlorpromazine and gained about 30 pounds in weight objected strenuously to it; after several months of trifluoperazine there was no change in weight.

Of the 100 patients, 21 improved sufficiently to be released for convalescent care; another 35 patients made a fairly good institutional adjustment to the extent that they began to participate actively in occupational and recreational departments; 44 patients made only slight improvement or no improvement at all, and therefore classified as unimproved.

Several patients did not begin to show any improvement until they had been treated with trifluoperazine for two or three months; then the improvement became so marked that all ward personnel and even other patients would comment on rapid rate of improvement, after initial advance had been made.

It is necessary to establish minimum maintenance dose for each individual patient. To maintain the improvement, trifluoperazine may need to be administered to these patients indefinitely. It is also interesting to note that some patients relapse when taken off medication for only a few days, or if the dose is drastically reduced.

#### SUMMARY AND CONCLUSIONS

- 1. One hundred chronic anergic schizophrenics refractory to all previous therapy had been treated with trifluoperazine over a period of 3 to 12 months.
- 2. Twenty-one patients improved sufficiently well to be released from the hospital for convalescent care, another 35 patients made a fairly good institutional adjustment to the extent that they are participating actively in occupational and recreational departments; 44 remained unimproved.
- 3. Forty patients developed extrapyramidal symptoms, easily controlled by Artane, Cogentin or Akineton.
- 4. The optimal dose had to be determined for each patient on an individual basis; some patients relapsed in a few days, if dosage was markedly reduced or discontinued, indicating that for these patients trifluoperazine therapy will have to be continued indefinitely.
- 5. No cases of jaurdice, skin rash or agranulocytosis developed in any of these patients even after 12 months on the drug.

No marked changes in weight or blood pressure were observed.

• Addendum: Since this paper was sub-

mitted, 6 more patients improved sufficiently to be released from hospital for convalescent care, making a total of 27.

### TRIFLUOPERAZINE IN REFRACTORY SCHIZOPHRENIC PATIENTS

#### JOHN M. ERDOS, M.D., AND JULIUS HILLINGER, M.D.1

In November 1958, we began a clinical trial of trifluoperazine in a selected group of chronic schizophrenic patients from the Veterans Division of Kings Park State Hospital. Forty-seven patients who had failed to respond to several other kinds of therapy—including insulin, electroshock, chlorpromazine, proclorperazine, or lobotomy—were selected for this study. Their ages ranged from 25 to 70 years, with the majority in the 25 to 35 age group. They had been hospitalized from 1 to 12 years. Diagnostically they were categorized as follows:

Schizophrenia, paranoid	16
Hebephrenic type	16
Simple type	3
Catatonic type	4
Mixed type	1
Involutional melancholia	2
Psychosis due to alcohol, acute hallucinosis	
with paranoid features	1
Psychosis due to trauma	1
Psychosis with syphilis of CNS, menigo en-	
cephalitis	2
Psychosis with cerebral arteriosclerosis	1

#### METHOD

Before treatment patients were given physical examination, weight was recorded, blood pressure checked, and blood examined for any dyscrasia. These items were rechecked at the end of therapy.

Most patients were started on a 5 mg. tablet daily. Elderly or debilitated patients received one 2 mg. tablet b.i.d. Dosage was increased gradually during the first few weeks until most patients were receiving 5 mg. t.i.d., then increased to 10 mg. b.i.d. Nineteen of the 47 patients received 20 mg. as the maximum dose, while 12 others required 30 mg. a day. The remaining 16

received varying dosages from 10 mg. to 70 mg. daily. Only one patient required 70 mg. to control his hostile and aggressive behavior.

Three patients received trifluoperazine in combination with electroshock therapy.

#### RESULTS

(See following table). Improvement was classified as *marked* when there was a significant improvement in both mental status and ability; *moderate* when patients showed only slight mental improvement but good improvement in general behavior, verbal communication, and activity on the ward; *slight* when there was no effect on the patient's psychosis but a slight improvement in general behavior.

Marked improvement	7 pts.	(15%)
Moderate improvement	10 pts.	(21%)
Slight improvement	17 pts.	(36%)
No improvement	13 pts.	(28%)

All 3 patients who received trifluoperazine in combination with electroshock therapy showed marked or moderate improvement. Two of them had been receiving ECT without response until trifluoperazine was added. Patients continued on trifluoperazine on completion of ECT. No untoward effects resulted from combining ECT and trifluoperazine therapy.

#### SIDE EFFECTS

No hematological or hepatic complications or dermatological reactions or excessive gains in weight were seen. Side effects observed included the following:

Blurring of Vision: (One patient) probably due to the atropine-like effect of the drug. The effect subsided spontaneously without any change in the regimen.

<sup>&</sup>lt;sup>1</sup> Kings Park State Hospital, Kings Park, N. Y.

Marked Extrapyramidal Symptoms: Severe tremors were seen in 2 patients. One of these was given Kemadrin (15 mg.) in conjunction with the 20 mg. of trifluoperazine he was receiving. The symptoms persisted and the trifluoperazine was discontinued and phenobarbital substituted. For 6 more days the patient showed marked restlessness, severe tremors and had crying spells. The reaction disappeared gradually and the drug was not reinstituted. Another patient also had marked tremors and some difficulty in swallowing; the reaction was controlled when the antiparkinsonian drug was added and the dosage of trifluoperazine reduced from 30 mg. to 20 mg. daily.

Dyskinetic Syndrome: (3 patients) One in particular presented severe symptoms: spasms of the neck muscles, extensor rigidity of the back muscles and corpopedal spasms. The reaction was quickly controlled in all 3 patients by the immediate administration of 7½ grs. of caffeine sodium benzoate intravenously. These patients

were not continued on Stelazine.

Akathisia: (9 patients). This is a specific symptom consisting of restlessness and inability to sit down and relax. These patients were unable to sleep well at night and sometimes were found pacing the ward. These symptoms were observed especially at the beginning of the treatment and usually disappeared spontaneously within a few days or whenever the dosage of trifluoperazine was slightly reduced.

A number of other patients manifested slight tremors, which were brought under control very quickly with the administration of antiparkinsonian medication.

The use of trifluoperazine requires considerable care and individualization of dosage. When the drug is properly used, it appears to be helpful in patients who have not responded to other therapies.

Our thanks and acknowledgement are made to Dr. Charles Buckman, Director for his keen interest and helpful suggestions in preparing this report.

# REPORT OF A CASE OF CONVULSION AND SKIN REACTION FOLLOWING BRIEF ORAL ADMINISTRATION OF IMIPRAMINE (TOFRANIL)

DANIEL GESENSWAY, M.D., AND KENNETH D. COHEN, M.D.<sup>1</sup>

Early clinical evidence suggests that Tofranil in the treatment of depressions is well tolerated, with serious side effects rarely encountered. Literature supplied by the manufacturer(1) states that evidence of any effect on the convulsion threshold in epileptic patients is contradictory and inconclusive. One study(2) of 84 psychiatric patients receiving Tofranil reported epileptiform seizures in 2 patients, one of whom had a past history of epilepsy and the other a characteristic EEG. A recent study by Pollack(3) reported no convulsive seizures in 273 patients. The case here reported exhibited a severe reaction to sunlight and grand mal seizures following brief administration of Tofrānil.

The patient, a 46-year-old white married housewife, was admitted to the hospital in September 1959 for the second time in 3 years. She is a very small woman who on admission appeared to be somewhat fearful and profoundly depressed. She would sit on the edge of her chair wide-eyed, staring vacantly into space. She became tearful when speaking of the recent death of a sister. She appeared to be preoccupied, withdrawn, with considerable psychomotor retardation. No gross disturbance of thought processes apparent. The patient stated that she began to feel increasingly degressed and tense since the death of her sister 4 months before admission to the hospital. She had difficulty with sleeping, some loss of weight, diminished appetite, but complained most of increasing trembling in her hands which she associated with nervousness.

Information from the patient's family stated that she has been ill for approximately 15 years with various somatic complaints including headaches, frequent cramps in her feet, pasms

<sup>&</sup>lt;sup>1</sup> Resident in Psychiatry and Senior staff psychiatrist, Philadelphia Psychiatric Hospital, Philadelphia 31, Pa.

of the stomach associated with retching, shortness of breath, and occasional episodes of stiffness and tenseness over her whole body which would occur several times a year. These were believed to occur when the patient was excited over something, causing emotional strain. The patient had an electroencephalogram in January 1955, because of her headaches. This EEG was reported as showing fast frequencies with low voltage amplitudes, but was considered to be within normal limits.

Hospital Course: The patient was at once placed on 25 mg. Tofrānil q.i.d. and gr. 3 of Tuinal at bedtime. On the second day she experienced a grand mal type of seizure; she was placed in bed and given phenobarbital. Tofrānil was discontinued. Physical examination revealed increased deep tendoned reflexes, but no other signs except what appeared to be a severe sunburn with erythema and edema over her face and the exposed portions of her hands and legs. Three hours later the patient had another grand mal seizure which lasted approximately 2 minutes. After Tofrānil was discontinued no further seizures occurred and

the skin involvement gradually subsided within a few days. An EEG 3 weeks after her convulsions revealed profuse, sometimes sharp theta waves. This was reported as being consistent with, but not exclusively diagnostic of epileptic phenomena. An EEG was repeated 2 weeks later and the tracing was noted to be essentially unchanged except for slightly less theta activity.

It was felt that in this case sensitivity to Tofrānil may have been a precipitating factor in a moderately severe sunburn reaction and 2 grand mal seizures after very brief oral administration of the drug. These symptoms did not recur when the drug was stopped and no after effects were noted.

#### BIBLIOGRAPHY

- 1. Descriptive literature supplied by the Geigy Company.
- 2. Lehmann, H. E., Cahn, C. H., and de-Verteuil, R. L.: Canad. Psychiat. A. J., 3: 155, 1958.
- 3. Pollack, B. : Am. J. Psychiat., 116 : 312, 1959.

## THIORIDAZINE (MELLARIL) 1 IN THE TREATMENT OF CHRONIC SCHIZOPHRENICS

JOSEPH A. BARSA, M.D., AND JOHN C. SAUNDERS, M.D.<sup>2</sup>

In recent years an increasing number of phenothiazine derivatives has been developed for the treatment of mental illness. Clinical experience has shown that the more potent a drug is in its anti-psychotic effectiveness, i.e., effectiveness in combating the delusions and hallucinations of the schizophrenic, the more prone is the drug to produce extra-pyramidal side effects. However, it has also been demonstrated that the development of extrapyramidal symptoms is not essential to the anti-psychotic action, for in many instances the use of anti-parkinson drugs can entirely remove the extra-pyramidal side effects and not diminish the antipsychotic efficacy of the tranquilizer. Efforts have been made, therefore, to develop a phenothiazine derivative with anti-psychotic action but without extra-pyramidal side effects. Thioridazine (Mellaril) has been

<sup>2</sup> Rockland State Hospital, Orangeburg, N. Y.

described as such a drug<sup>3</sup>. The purpose of the present study was to test thioridazine in the treatment of chronic schizophrenics who had developed extra-pyramidal symptoms with other phenothiazine derivatives.

One hundred chronic female schizophrenics between the ages of 16 and 71 were selected. They had been continuously hospitalized for 2 to 25 years. They had been receiving a variety of tranquilizing drugs for 2 to 4 years, and during the last 6 months had reached a plateau of slight or moderate improvement in their psychosis. Forty-two patients were receiving chlorpromazine (Thorazine), 5 proclorperazine (Compazine), 3 trifluoperazine (Stelazine), 12 chlorpromazine combined with proclorperazine, 37 chlorpromazine combined with trifluoperazine, and 1 chlorpromazine with reserpine. Furthermore, with all of these patients it had been necessary to add benztropine methanesulfonate (Cogentin) to the medication in order to relieve extra-pyramidal side effects such as

<sup>&</sup>lt;sup>1</sup> Mellaril was supplied by the Sandoz Pharmaceutical Laboratories, Hanover, N. J.

Parkinsonism, akathisia and dystonic symptoms. The above tranquilizing drugs and the benztropine methanesulfonate were discontinued immediately prior to this study with thioridazine.

•The dose of thioridazine was started at 50 mg. q.i.d. and was gradually increased until either satisfactory therapeutic results were achieved or significant side effects appeared. In the first month, when the dose of thioridazine was not above 400 mg. a day, no extra-pyramidal symptoms were observed. However, 7 patients complained of dryness of the mouth, 6 of dizziness, and 3 of a "hangover" feeling. As the dose of thioridazine was raised (600-2000 mg. a day), some patients showed evidence of extra-pyramidal symptoms, necessitating the addition of benztropine methanesulfonate. Eight patients developed signs of Parkinsonism, 5 generalized tremulousness, 10 akathisia, and 2 dystonic symptoms. There were also two patients with photosensitivity. Two patients on 100 mg. q.i.d. and 200 mg, q.i.d. respectively had grand mal convulsive seizures for the first time, even though they had been on equally high doses of chlorpromazine in the past without incidence of seizures.

Thioridazine was administered for 5

months, and at the end of this period the patients' progress as compared to their mental condition just prior to this study, was evaluated as follows: 3 patients were markedly improved, *i.e.*, in remission and ready for release, 16 moderately improved, 44 slightly improved, 33 unimproved, and 4 patients were worse, being more tense, overactive, irritable and disturbed.

It was observed that thioridazine, as compared to chlorpromazine, had a weaker sedative effect even when high doses were used. Thus, it was not as useful as chlorpromazine in treating the very disturbed patient. On a milligram for milligram basis, the anti-psychotic effect of thioridazine was not as potent as that of chlorpromazine, and higher doses of thioridazine were needed to achieve the same effect. However, one of the advantages of thioridazine was that even with high doses excessive drowsiness and lethargy were usually not produced. In chronic schizophrenia, therefore, thioridazine's greatest usefulness appears to be in the treatment of those patients who develop severe or persistent extra-pyramidal symptoms with one of the other phenothiazine derivatives.

# MELLARIL IN THE TREATMENT OF CHRONICALLY DISTURBED PATIENTS: WITH SPECIAL REFERENCE TO REDUCED EXTRAPYRAMIDAL COMPLICATIONS

A. KHAKEE, M.D., AND G. F. HESS, M.D.<sup>1</sup>

One of the limiting factors in the use of of the phenothiazine derivatives is their tendency to induce extrapyramidal stimulation, ranging from akathisia to Parkinsonism, at doses which do not provide adequate tranquilization. Concomitant use of anti-Parkinson drugs, adds additional cost to therapy without eliminating the basic cause of extrapyramidal stimulation.

Reports that a comparatively new phenothiazine, Mellaril<sup>2</sup> (thioridazine hydrochloride), was relatively devoid of extra-

pyramidal stimulation while yet effective as a neuroleptic prompted us to undertake the evaluation reported here. A total of 22 patients were selected from the male psychiatric service; 18 of these had responded with extrapyramidal symptoms to every phenothiazine previously employed. The remaining 4 had remained completely refractory to all forms of therapy.

All 22 were chronic cases, 6 having been hospitalized for from 1-5 years, and the remaining 16 for periods in excess of 5 years. Diagnoses were: 18 schizophrenic reactions and one each of generalized

<sup>&</sup>lt;sup>3</sup> Kinross-Wright, V. J.: J.A.M.A., **170**: 1283, 1959.

<sup>&</sup>lt;sup>1</sup> Danvers State Hospital, P. O. Hathorne, Mass.

<sup>&</sup>lt;sup>2</sup> Sandoz Pharmaceuticals, Hanover, N. J.

paresis, epidemic encephalitis with psychosis, manic-depressive, and alcoholic deterioration. The usual starting dose was 300 mg. daily, except for two debilitated patients who received 100 mg. daily. Range of dosage initially was from a minimum of 100 mg. to a maximum of 600 mg. daily, which was then reduced as indicated to a maintenance dose of 300-400 mg. per day.

At the time the 18 patients were switched to Mellaril, each one was exhibiting extrapyramidal symptoms to one of the following drugs; chlorpromazine, triflupromazine, menazine or trifluoperazine. Within 72 hours after the institution of Mellaril, there was complete remission of these symptoms in 15 patients. Drooling, tremulousness, motor restlessness and mask-like facies disappeared, food intake increased and the patients became generally more manageable. No reappearance or evidence of extrapyramidal stimulation whatsoever has been observed in these 15 patients during their treatment with Mellaril. The remaining 3 patients required a reduction in dosage and adjunct medication to relieve their extrapyramida\_ symptoms.

The clinical improvement in mental status was as follows: one patient markedly improved and paroled; 5 patients greatly improved and transferred to front wards; 9 patients moderately improved but retained in the same ward; 3 patients not improved.

The remaining 4 cases, diagnosed as

schizophrenic reaction, had been refractory to previous therapy. Two of these improved sufficiently to permit home visits for one and placement of the other in a parole ward.

Two patients who had exhibited photosensitivity to other phenothiazines did so to Mellaril as well, but improved on routine therapy and a reduction in dosage. Hypotension occurring in 3 patients was controlled by a reduction in dosage. One patient showed "catatonic" symptoms on 400 mg. which cleared up when the dose was reduced to 200 mg. daily. Examination has failed to reveal any evidence of jaundice or blood dyscrasias during the entire 9 months' course of treatment with Mellaril.

#### SUMMARY

Moderate to marked improvement in psychomotor behavior was obtained with Mellaril in 17 of the 22 cases in this series. In addition, there was complete elimination of extrapyramidal activity in 15 of 18 patients who had manifested Parkinsonian symptoms with the drugs previously employed. Our observations indicate that Mellaril is equally effective, or more so, than other phenothiazines in the treatment of various psychiatric disorders, but has a distinctly lessened tendency to induce extrapyramidal stimulation. In our experience, this is a significant contribution to the more effective management of larger numbers of disturbed patients.

#### SLEEP REGULATION WITH THALIDOMIDE

#### SIDNEY COHEN, M.D.1

Insomnia apparently is a widespread disorder; measures other than drugs can usually induce satisfactory relaxation and sleep in the milder cases. However, when tension, anxiety or depression impairs sleep the long hours of restless wakefulness augments the underlying disorder and chemical intervention may be indicated. Occasionally, lesser tension states and situational depressions

will respond satisfactorily merely with correction of the insomnia.

Accidental or suicidal overdosage and habituation to the hypnotics are serious drawbacks to their use. Many non-barbiturate sleeping medications have been proposed but the ideal, non-toxic, non-habit forming agent is yet to be found.

Thalidomide 2 is a further attempt to

<sup>&</sup>lt;sup>1</sup> From the Neuropsychiatric Hospital, VA Center, Los Angeles 25, Calif.

<sup>&</sup>lt;sup>2</sup> Kevadon is the trademark of the Wm: S. Merrell Co., Cincinnati, Ohio for its brand of Thalidomide.

provide a safe somnifacient. Opinions about its capacity to addict will have to await future studies, no instances of habituation have been reported to date. Thalidomide is alpha (N-phthalimido)-glutarimide represented structurally as:

The  $\mathrm{LD}_{50}$  of thalidomide in mice could not be determined by Kunz, et al.(1). Oral and subcutaneous doses of 5 gm/kg and 1 gm/kg intraperioneally were well tolerated and did not produce death in any of their animals. Thalidomide has been used extensively in Europe(2). Reports of death due to overdosage have not appeared. A 70-year-old patient survived a single dose of 2100 mg. without treatment(3).

Thalidomide was given to 50 neuro-psychiatric inpatients for whom barbiturates, chloral hydrate or glutethimide had been routinely ordered. Single bedtime doses of 100 to 200 mg. were administered with an occasional patient requiring only 50 mg. The patient's subjective impression of the sleep producing and sleep sustaining properties of thalidomide as well as a comparison with his prior sleep medication were recorded. The nurses charted their overall impressions of the patient's nocturnal activities.

The results over a 6-month period have been very satisfactory. Some patients report that thalidomide is the best sleep inducing medication that they have ever taken. A few state that it is ineffective even in 200 mg. amounts. Excellent results were obtained in 21 patients (42%). They had the subjective recall of restful sleep without associated grogginess or dizziness on awakening. Seventeen (34%) considered that it produced good hypnosis but there were occasional nights when sleep was broken or not restful. Five patients (10%) stated that thalidomide produced adequate nochunal sedation, but they complained of a "hangover" upon awakening. Although tolerance to this side effect developed after additional doses, this group were considered treatment failures. Seven patients (14%) persistently complained either of poor induction, broken sleep or very early awakening.

In order to explore the possibility that thalidomide might have ataractic properties, 15 additional seriously disturbed psychotic patients were given total daytime dosages of 1200-2500 mg. The drug was less effective than the available phenothiazines for this purpose. It was interesting to note, however, that these large amounts did not produce stupor. Respiratory depression did not occur. Serial hemograms, liver panels, urine analyses and blood creatinines were unchanged from control values. Abrupt discontinuance of thalidomide did not result in a withdrawal syndrome. One of the patients developed an erythematous rash and temperature of 100.6° rectally. Another patient on the high cosage study had a blotchy rash and convulsed while on thalidomide. The medication was discontinued in both cases without further sequellae.

#### SUMMARY

Thalidomide is an effective agent for the treatment of insomnia with a safety factor which makes its use desirable when there is danger that accidental or deliberate overdosage may occur.

#### **BIBLIOGRAPHY**

1. Kunz, W., Keller, H., and Muckter, H.: Arzneim. Forsch, 6: 426, Aug. 1956.

2. Brochure on Kevadon. Wm. S. Merrell Co., Cincinnati 15, Ohio, Dec. 1959.

3. de Sauza, L. D.: Brit. Med. J., 2: 635, Oct. 3, 1959.

#### CASE REPORTS

# AN UNUSUAL PERVERSION: THE DESIRE TO BE INJURED BY AN AUTOMOBILE OPERATED BY A WOMAN

#### MARTIN H. KEELER, M.D.1

Some perversions, while representing formidable psychopathology, are also tributes to the complexity of the human mind and unconscious ego mechanisms.

The patient a man in his late twenties, reported a periodic desire to be injured by a woman operating an automobile. This wish, present since adolescence, he had by dint of great ingenuity and effort, gratified hundreds of times without serious injury or detection. Satisfaction could be obtained by inhaling exhaust fumes, having a limb run over on a yielding surface to avoid appreciable damage or by being pressed against a wall by the vehicle. Gratification was enhanced if the woman were attractive by conventional standards. Injuries inflicted by men operating automobiles or other types of injury inflicted by women had no meaning. He experienced pleasure from the experience, thus establishing the symptom as a perversion rather than a compulsion.

The patient's sexual, social, and occupational adjustment was good and his intelligence superior. He intellectualized to a considerable extent but could experience and manage strong positive and negative feelings. He was ashamed

<sup>1</sup> Instructor, Department of Fsychiatry, University of North Carolina Medical School, Chapel Hill, N. C.

of his symptom but somewhat proud of its unusual nature. A Minnesota Multiphasic Personality Index did not demonstrate significant psychopathology and did not indicate the probable presence of perversion or impulse neurosis.

Because of limited contact with the patient and considerable use of repression on his part, past history is not considered adequate for a detailed formulation. Two unusual biographical items were the presence of considerable maternal rejection and of a clouded and probably distorted memory of being hurt at the age of 6 by some woman in a manner connected with sexuality. This case does not seem to be unusual in terms of the genetic and dynamic factors involved but is of interest as it demonstrates the complexity of ego operation that can be involved in a perversion. At least two interlocking themes are necessary for an essentially masochistic gratification. The injury must be inflicted by a woman, probably as a defense against other feelings involving women, and must be inflicted by an automobile, this probably having specific symbolic meaning.

### TRANSIENT VISUAL SYMPTOMS ASSOCIATED WITH MELLARIL MEDICATION

#### S. BERGEN MORRISON, M.D.<sup>1</sup>

In the fall of 1955 the author was a senior resident in an outpatient clinic during the time Kinross-Wright was carrying on a study involving the use of a phenothiazine called NP-207 (piperidinochlorphenothiazine). NP-207 was an experimental phenothiazine that never reached the open market as visual changes were noted in the patients

in the form of a retinitis pigmentosa. Patients that we saw complained of an inability to see clearly when they had come indoors after having been in the bright sunlight. Many of them showed eyeground changes and a marked loss of vision although early no retinal changes could be detected.

Since these 28 cases were seen in 1955.

<sup>&</sup>lt;sup>1</sup> 2317 Washington Ave., Waco, Tex.

I have been alert as to the possibility of symptoms of this sort occurring with other phenothiazines, although no attempt has been made to question patients directly about whether or not they had symptoms of blurring of vision or dimness of vision on coming in from out of doors. Recently a case has been seen showing the same type of toxic reaction to Mellaril (thioridazine). Mellaril is identical to NP-207 except that a thiomethyl group has been substituted for the chloride.

The patient was a 17-year-old white school boy who was first seen in September of 1959. He was considered to be a schizoid adolescent who was on the verge of a major schizophrenic episode. When first seen, he was put on Pacatal (mepazine) 75 mgm. daily and remained on this medicine for 18 days. The patient then complained that he was not being relaxed enough and was changed to Mellaril 75 mgm. daily. The patient felt relaxed for a time on Mellaril, and remained on 75 mgm. daily until one month later when he was admitted to the hospital in a major schizophrenic episode.

While in the hospital, the patient received Mellaril up to 1200 mgm. daily and remained on that dosage for 12 days. He also received 8 electric shock treatments along with sodium amytal as needed for sleep. He remained in the hospital for 22 days and was dismissed as improved. Three weeks later at the time of a follow-up visit the patient complained that he was not able to see as he came into my office and that he could not read print while sitting at my desk. He had noticed that he was having difficulty seeing when he came in from the outside and had noticed this for approximately 7 to 10 days. No previous visual problems had occurred. At this time he was receiving 400

mgm, of Mellaril daily and had received this amount for the previous 30 days. The patient's eyegrounds were checked in the office and were found to be negative. All medication was stopped. Complete eye examination was done by an ophthalmologist and was considered to be negative. The patient was seen again in 2 weeks and said that he could see much better on coming indoors than he had on the previous visit although he did not feel that his vision was completely normal. He was seen 2 weeks later and indicated that he was able to see clearly in my office and was able to read print normally. In all, the patient had received approximately 30 grams of Mellaril. It cannot be forgotten that he was on Facatal briefly for a period of 18 days; however, he had not been receiving Pacatal for almost 3 months prior to the onset of his symptoms. It is understood that at least 3 reactions of this sort have been noted with Mellarl to date.2 It is felt that an alertness to complaints of this type is needed if serious visual changes are to be avoided in certain patients receiving Mellaril. It is possible that other compounds whose structure is similar could also cause a toxic retinitis.

#### SUMMARY

A case is presented in which a patient complained bitterly of blurring of vision when coming in from out of doors while receiving Mellaril and after having received approximately 30 grams of Mellaril over a period of 2½ months. The visual complaint cleared over a period of approximately 4 weeks after the Mellaril had been stopped. It is suggested that this is an early toxic reaction to Mellaril of the type seen previously with an experimental phenothiazine called NP-207.

<sup>&</sup>lt;sup>2</sup> Personal communication.

#### HISTORICAL NOTES

#### DR. RUFUS WYMAN OF THE McLEAN ASYLUM

ERIC T. CARLSON, M.D., AND MAY F. CHALE, A.B.1, 2

Although Dr. Rufus Wyman appears to have been the first fulltime medical superintendent of an Americal mental hospital, his rôle in the history of American psychiatry has not received sufficient attention and emphasis. Born on July 16, 1778, in Woburn, Massachusetts, a member of the fourth American generation of a family that had emigrated to Massachusetts in 1640(1), he was graduated from Harvard College in 1799. After teaching school for one year he embarked upon his medical apprenticeship, and subsequently established an office in Chelmsford.

In his 10 years of general practice Wyman's reputation as a successful country doctor rose rapidly and the demand for his services put him under considerable physical pressure. Ill-health from probable tuberculosis may have contributed to his seeking the newly-established and presumably less arduous post of physician-superintendent at the McLean Asylum. Up to this point there is no evidence that he had any special training in or inclination towards psychiatry.

In January 1817 the Hon. Benjamin Pickman recommended Wyman for the superintendency of the asylum. In the spring of 1818 Wyman's only competitor, Dr. George Parkman, for unknown reasons withdrew his application and Wyman was appointed. In May, Wyman made a tour of the hospitals in New York and Philadelphia, and on October 6, 1818, the first patient was admitted to the McLean Asylum. This asylum was the first mental hospital in New England, and as such represented an experiment: it was founded not only to provide medical treatment for the insane, but also to introduce to New England what Wyman

called "a revolution in treatment"-moral treatment.

Wyman's therapeutic theories had two main sources: Pinel and the Tukes, with the latter influence definitely predominant (2). Wyman quotes from Pinel's writings and may also have derived more intimate knowledge of the Frenchman's work from a friend, Dr. William Walker, who had spent some time in Paris, and from Dr. Parkman, who had studied under Pinel. The influence of the English Quakers and their York Retreat is more obvious and direct. The Friends' Asylum in Philadelphia, which Wyman had visited, was patterned after the Retreat, and Thomas Eddy, whom he had met, had adhered closely to the pronouncements of the Tukes in his campaign to found the Bloomingdale Asylum in New York. Wyman himself had read Tuke's works and recommended them to others.

In his neurophysiology Wyman accepts the conception of the brain as the organ responsible, both through perception and volition, for contact with the outside world. He avoids the arguments of both materialism and immaterialism and, as a good associationist, doubts that the brain itself can initiate any knowledge or action. In stressing that one should observe and emphasize the actions of man rather than the terms by which they may be called he reveals himself as a phenomenologist. He divides phenomena into three orders: the first, physical or inorganic; the second, organic, including both vegetables and animals; and the third, mental, which is restricted solely to the animal world. Since in his opinion the body and the mind are mutually dependent, he strongly advocates that physicians have as thorough knowledge of the mind as of the structure and function of the body. He believes that the body and mind can produce diseases in each other.

In his psychology he emphasizes the need for close observation, following the method

<sup>&</sup>lt;sup>1</sup> From the Department of Psychiatry of the New York Hospital (Payne Whitney Clinic)—Cornell University Medical College, New York, N. Y.

<sup>&</sup>lt;sup>2</sup> This investigation was supported in part by a Research Grant (M-2146) from the National Institute of Mental Health, U. S. Public Health Service.

1035

of Bacon. He is primarily a Lockean associationist, and although he mentions the Scottish faculty psychologists (Reid, Stewart, and Brown), he denies that faculties can be integral parts of the mind. He states, "There is but one agent acting in different ways, or performing different acts." In this stand he also shows no evidence of being influenced by the phrenological theories that were then coming to this country. He complains that even the approved medical writers often show great ignorance of mental functioning, which he feels should be separated into two main divisions: knowledge, or intellect, and the passions, or affections and emotions.

He states that a definition of insanity is difficult, and perhaps even impossible, to formulate, but no more so than a definition of physical illness. He starts off with an idealistic definition that any variation from a perfect state of health must be considered a disease. He modifies this with respect to physical diseases by stating that they should be associated with discomfort or pain, and then attempts a similar modification for mental disease, using a social concept of how other, normal people will judge the individual insane by his behavior. Strange opinions are acceptable in science, but not in ordinary matters. If the strange opinion or behavior is due to lack of information or experience, then the person, if healthy, should respond to education or evidence. Wyman goes on to state that, to the legal world, a delusion or false belief is essential to insanity, but insists that doctors must go further than lawyers to understand how this state arises.

Wyman divides his concept of psychopathology, in which he does not discuss diagnosis, into the two major categories of the mind: the intellect and the passions. The intellect can suffer from perversion, diminution, or augmentation. With the first, perversion, patients usually start from incorrect premises, but reason correctly. He does recognize, however, that faulty reasoning from sound premises occasionally occurs. With diminution, slowness of thinking or poor memory may be present. In the case of augmentation some may deny that it is a disease, being instead a benefit, but he points out that this condition is usually

temporary, with one or more functions out of proportion to the rest of the mental structure.

In the case of the passions, only exaltation or depression can occur. Wyman agrees with Pinel, moreover, in asserting that diseases of the passions or intellect can exist separately, and he states, "These diseases are more to be dreaded than any other, to which man is liable." He recognizes the passions as the main driving source of man's actions, and realizes that when they become excessive the intellect is unable to control them. He feels that in a sound state of mental health the passions are under control, and that an individual must constantly exercise the control function in order to remain healthy. Besides exaltation and depression he recognizes an alternation of both, and gives an excellent clinical description of the transition from a depressed to a manic state. He concludes that a pure disease in one of the functions of the intellect or passions is rare and that there is usually a mixture of almost infinite variations. He makes no sharp distinction between the normal and the insare mind; he points out that the boundary is at best a thin one, and that usually a gradual attack of insanity occurs with a most imperceptible changes at first.

Wyman's theories about psychiatric therapy were derived from his own psychological conceptions and the teachings of earlier advocates of moral neatment. Among his fundamental therapeutic principles are the following: the patient must always be removed from his home and must always receive moral treatment, even if his insanity arises from organic disease; his treatment must extend over an adequate period of time and, above all, he must consistently receive only mild and kindly care. Wyman admits that medical treatment may be required if there is organic disease, but in general he is opposed to bleeding, purging, and low diet, feeling that these methods are seldom beneficial, usually injurious, and frequently fatal. At best the medical treatment must be suited to the state of the individual patient. •

To the contrary, moral treatment is-for all patients, no matter what their psychiatric state or its cause. In moral treatment it is

ŧ

important to divert the mind from un- pleasant subjects and to break up old associations of ideas. This goal can be achieved through exercise of the body and mind and through formation of correct habits. A constant pattern of life in the hospital through encouragement of proper conduct and adherence to rules and regulations regarding the time of arising and retiring, eating, and exercising are essential to tranquilizing the mind. Patients are encouraged to avoid violence and are told that, if necessary, restraints will be used. Because of the importance of constancy, kindness, and vigilance, Wyman stressed the necessity of obtaining sound, mature, and amiable attendants. He recruited many of his early attendants from the ranks of schoolteachers.

The activity program of moral therapy at the McLean Asylum included both work and recreation. In the former category were such occupations as sawing wood, gardening, sewing, embroidering, and studying the various mechanic arts. For amusements there were draughts, chess, backgammon, ninepins, and music, as well as reading, writing, walking, riding, and swinging. Wyman states in addition that conversation between patients is often useful in showing them the absurdity of their thoughts.

In order to care for the patients effectively, Wyman classified them by sex and by degree and nature of illness. Men and women were kept separate and cared for only by members of the same sex. These two groups were then subdivided into three classes according to their psychopathology, with each class under a supervisor. Each class made up a distinct family, with its own bedrooms, dayrooms, dining rooms, bathing rooms, and airing yards. Each patient had his own bedroom, moreover, so that there was less need for restraint. Chains and straitjackets were never used, and other restraint only with the permission of the supervisor, who then reported it to the superintendent. The punitive aspect of restraints was thereby avoided. No employee was allowed to strike a patient, even in self-defense. Wyman undoubtedly had difficulty applying this-classification in the early years when the number of patients was minimal, but this grouping was probably quite effective

٠,٠

with 65 to 70 patients maximum in the hospital, all of whom the physician visited at least once a day.

In the first 5 years of the hospital 28% of the patients were discharged as recovered, while in the second 5 years 43% recovered, and in the third, 40%. Wyman ascribed this appreciable increase to a regulation put into effect in the fall of 1823 that all patients removed before 3 months (as unrecovered) would have to pay for the entire 3 months. This provision contributed to an adequate length of therapy. Over the 15 years of his superintendency Wyman discharged 68% of his patients as improved or recovered, while 9.5% died while in the hospital.

Throughout his medical career Wyman was active in the Massachusetts Medical Society; for many years he served as censor and counsellor from his district and during the last two years of his life he served a term as President. In 1830 he was selected to deliver the annual address to the society. His discourse, "Mental Philosophy as Connected with Mental Disease," was later published in pamphlet form. This, an earlier pamphlet on religion (3), and his annual reports, are his only published writings. The contents of this pamphlet have been discussed in the earlier section on his psychiatric thought.

Also in 1830 Wyman corresponded with Gov. Lincoln of Massachusetts regarding plans for the new State Hospital at Worcester. He wrote of his ideas and offered to lend his assistance provided that he would not be called away from his duties at McLean.

Two years later, however, he decided to resign these duties because of ill-health. But the McLean trustees refused his resignation, allowing him only a leave of absence to improve his physical condition. This time he spent on a trip to northern New England with his wife and daughter. He was then a member of the committee of the Massachusetts Medical Society investigating the question of whether the Asiatic cholera was contagious, and since cholera had just entered Canada, and in spite of his impaired health, he left his family and proceeded to Montreal in order to study the question further. He observed

the patients directly until he himself became ill with a gastro-intestinal disorder (not cholera apparently). He then returned to McLean, only to attempt unsuccessfully to resign in August. In September, however, the trustees voted to separate the duties of physician and superintendent and asked Wyman to remain on as physician at an unchanged salary. Wyman found even this less time-consuming post burdensome to his health, however, and on January 9, 1835, his resignation was finally accepted. He was elected a trustee but declined this position also because of his health.

Upon his retirement he moved to Roxbury, where he engaged in philosophic pursuits and the cultivation of his home and grounds. Married since 1810, he was the father of 6 children and was greatly devoted to his wife and family. He maintained his outside interests also, continuing active in the Massachusetts Medical Society and the American Academy of Arts and Sciences. He later became President of the Norfolk Temperance Society. Although semi-retired he was much in demand as a psychiatrist and he generally had a few psychiatric patients living with him and his family up to the time of his death of a lung infection on June 22, 1842.

Because he was a modest man who made no effort to advance his own fame it is difficult to learn much about his personality. He was hard-working and devoted to his post, being absent from the asylum only 5 nights in his first 14 years there. He seems to have been respected and to have become the friend and confidant of his patients. He had a reputation for justice, honesty, and integrity, as well as for a talent for practical mechanics. Two of his sons, Morrill and Jeffries, became physicians after being graduated from Harvard and went on to attain greater public fame than their father, but his many years of conscientious service and his enlightened use of psychological treatment for the mentally ill made it appropriate that in later years such diverse people as Luther Bell, Amariah Brigham, and Oliver Wendell Holmes should honor him for his contributions to the development of American psychiatry.

Acknowledgement: Appreciation is expressed to Evelyn A. Woods, A.B., for her assistance in the preparation of this paper.

#### BIBLIOGRAPHY

- 1. The sources of Wyman's biography are: Morrill Wyman, Jr., A Brief Record of the Lives and Writings of Dr. Rufus Wyman (1778-1842) and his Son, Dr. Morrill Wyman (1812-1903), Cambridge, 1913; Boston Courier, July 12, 1842; Med. Commun. Mass. Med. Soc., 7: 131, 1842; N. I. Bowditch, History of the Massachusetts General Hospital, Boston, 1851.
- 2. Wyman's thought may be found in: Rufus Wyman, A Discourse of Mental Philosophy as Connected with Mental Disease, Boston, 1830; Address of the Trustees of the Massachusetts General Hospital to the Subscribers and to the Public, Boston, 1822, pp. 22-28; Annual Report of the Board of Trustees of the Massachusetts General Hospital, Boston, 1834, pp. 11-21.
- 3. Wyman, Rufus, Remarks on the Observation of the Lord's Day as a Moral, a Positive and a Civil Duty, Cambridge: Hilliard and Metcalf, 1816.

#### JOHANN CHRISTIAN REIL 1759-1813

#### ERNEST HARMS 1

Outside his native Germany, hardly more than the name of Johann Christian Reil is known. There was considerable astonishment when, in 1957, I published, in the British Journal of Mental Science (Vol. 103, No. 433), a paper entitled Modern Psychotherapy 150 Years Ago, in which it was shown that no psychiatrist before 1900 had presented more of the basic ideas of this century's psychotherapy than had the author of Rapsodien ueber die Anwendung der psychischen Kurmethoden auf Geistes-

ŧ.

<sup>1 30</sup> West 58th St., New York 19, N. Y.

ŧ

zerruettungen (Rhapsodies on the Application of Psychotherapy to Mental Diseases), published in 1803. I venture to predict that later centuries will hand the palm to J. C. Reil as the greatest of them all.

This prediction is not based entirely on the Rhapsodies, which led Kirchhoff to call Reil the "conscious discoverer and founder of rational psychotherapy," but also on a number of shorter and now completely unknown works of Reil which were published during the last 5 years of his life. Together with his colleague, Hoffbauer, Reil published, in 1808 and 1812, two volumes of Beträge zur Befoerderung einer Kurmethode auf psychischen Wege (Contributions to the Advancement of Psychotherapy), which had originally been intended as a journal. In it we find 9 major contributions by Reil, the longest of which "Ueber die Centricitaet der Organismen" (On the Centricity of the Organisms) (1812), presents the most magnificent psychological-biological philosophy I have ever encountered and which would require a long paper to adequately describe. In this memorial note I should like to point to another of the Reil papers, "Das Zerfallen der Einheit des Koerpers im Selbstbewusstrein" (The Disintegration of the Unity Experience of the Body in the Self-Consciousness) (1808). In this paper Reil presented a somatological concept of what we today designate as schizophrenia and which appears clearer and more convincing than anything presented since. Reil is a psychological phenomenologist for , whom the mocern concepts of Ganzheit, totality, unity, centricity basic elements of scientific interpretation. Psychologically, human experience is a unit experience of body and mind which are to one another, also inseparably tied together in the selfconsciousness. If, by the process of abstraction, one boils down all bodily and psychic experiences, one arrives at a final self-recognition which Reil calls the "Gemein-Gefuehl"—the basic "completely empty" feeling of being and existence, in which the body is felt vaguely, but the experience is nevertheless that of a unit. There is no notion of space or weight, but only of time. For those born blind and deaf, the Gemein-Gefuehl is the major "sense"; for all human

individuals it is the most elementary experience.

It is the Gemein-Gefuehl as psychic function that holds our mental life together and mediates between the multitude of elements of which it is composed. It is the carrier of our ego, as well as the frame of our self-consciousness. It is therefore practically involved in all of our perceptions and activities.

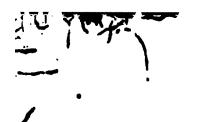
A disintegration of the Gemein-Gefuehl is the cause of a large number of mental ailments. Its impairment means that it loses the ability of functioning in binding together and controlling the various psychic dynamics. Reil distinguishes two forms of such disfunctioning of the Gemein-Gefuehl. The first, the minor form, is a Lockerung (loosening) of control; the major form is complete destruction of the Gemein-Gefuehl which renders it unfit to coordinate the various mental functions. In the examples offered by Reil we see the most evident cases of what Kraepelin and Bleuler called dementia praecox, what Morton Prince called the split personality, and what we today commonly call schizophrenia. There is the case of the patient who believes he is not himself, that he is someone else or has someone else's body. There is the patient who is not sure whether the hand he writes with is his hand or whether it is his right or left hand. There is the patient who believes himself incapable of using this or that part of his body, or has a catatonic freezing of the posture or of the tongue. There is the case of the person who does not know that it is he who is speaking and who uses false words. Another well-known pattern is that of the patient who is unable to distinguish between the actor and the listener. There are the cases of dissociation of space, in which nearby sounds and objects appear to be distant and distant ones oppressively near. And there are the most serious paranoid forms of split and double personality in which the ability to recognise reality does not exist.

Reil was far from being a "psychist" who believed that all mental illnesses are entirely psychic. He recognized the actual neurological diseases and the validity of somato-psychological aspects. But based on

his concept of the Gemein-Gefuehl, he maintained that they were "diseases of the psyche," that is, of the basic unity of our mental or psychic disposition. At one point he designated the phenomena as illnesses of the centricity power of the organization of the psyche, which has primarily a dynamic function.

Towards the end of his treatise, Reil tries to make it very clear that in the cases described there exists, of course a relationship between the psyche and the nervous system as well as the rest of the physical organism, which may or may not have

become involved or affected. Basically, however, the disintegration that Reil described, and which description represents the first full-fledged presentation of schizophrenia, is a psychic pathology. Although the theory that schizophrenia is entirely or primarily a psychic disease has been seriously challenged in recent years, it has yet to be determined whether the psychiatrist who was the first to describe it as such was right or wrong. Nevertheless, the amazingly clear presentation by Reil in 1808 deserves to be known, and it should survive the struggle of opinions about it.





#### **COMMENTS**

#### REGIONAL PSYCHIATRY

For a considerable time we have published each year in one of the Spring issues of this Journal a survey of psychiatry facilities in the city where the annual meeting of The American Psychiatric Association is to be held, and in the surrounding area as well; sometimes including an outline of the history and organization of the psychiatric services of the state concerned. This has been possible through the courtesy of members active in the respective regions.

The purpose of these articles on regional psychiatry has been to familiarize attending members with the work going on in the area where they meet and to facilitate visits or further inquiries they may wish to make.

Five years ago the annual meeting was held in Atlantic City, New Jersey. This year's meeting is the sixth to convene in this popular seaside resort. An excellent comprehensive account of psychiatric institutions and activities in the State of New Jersey was prepared by Dr. Henry A. Davidson, Superintendent and Medical Director of Essex County Overbrook Hospital at Cedar Grove, and appeared in the April 1955 issue of the *Journal*. Visiting delegates are referred to this article.

The following changes and additions have been made:

New Jersey's mental health program is operated by the Division of Mental Health and Hospitals in the Department of Institutions and Agencies. Mr. John W. Tramburg is the Commissioner, and the Director of Mental Health and Hospitals is Dr. V. Terrell Davis, a fellow of the American Psychiatric Association. Significant developments since 1955 include:

1. Reduction of the census in the state hospitals to current figures:

Greystone Park 5200
Trenton 3300
Marlboro 3000
Ancora 2250

- 2. The establishment of an active Bureau of Research in Psychiatry and Neurology under the direction of Dr. Joseph Tobin. The laboratories and offices of the Bureau are located on the grounds of the New Jersey Neuro-Psychiatric Institute at Princeton.
- 3. The establishment of a state supported community mental health services program which has replaced the former mental hygiene clinics of the state hospitals and has been accompanied by the development of outpatient departments providing a continuum of services to patients applying to the State mental hospitals.
- 4. Seton Hall College of Medicine, New Jersey's first and only medical school, will graduate its first class of students in June of 1960.

#### AMERICAN CHILD PSYCHIATRY, LTD.?

A few years ago, I received a complimentary copy of a Russian textbook of child psychiatry by a leading representative of the specialty. Not one of the innumerable references gave the slightest indication that any work had ever been done outside the geographic boundaries of the Soviet Union. There was one casual mention of Kraepelin and one of Mayer-Gross. Violà tout.

How do we in this country fare by com-

parison? A comprehensive 1958 survey of the problems in mental abnormality offered a bibliography of 303 items; of those only 13 (4.3%) referred to articles in languages other than English. The papers published in 1958 in an American quarterly, the bulk of which is devoted to child psychiatry, referred to a total of 476 sources, of which 15 (3.2%) stemmed from non-English authors. There were, in addition, 22 quotes

1

from translations of German-language contributions, of which 17 were early psychoanalytic treatises (12 by Freud, 3 by Fenichel, and 2 by Ferenczi); 26 book reviews dealt exclusively with books in the English language. At the 1954 International Institute of Child Psychiatry, 18 of 24 papers were read by persons residing on the North American Continent (17 from U. S. A., one from Canada); the references appended to those studies did not contain a single item reported in a foreign language.

This is slightly better than the total omission of non-domestic investigators in the Russian textbook but hardly a cause for self-congratulation. The impression is given that we here do not know about, or do not care for, work done elsewhere. In fact, one is left with the feeling that no such work is being done or has been done elsewhere or that, if it does exist, it does not merit our serious attention. It is a rare American child psychiatrist, indeed, who has ever heard, for instance of Ziehen, de Sanctis, Homburger, Tramer (the man who has coined the very term, child psychiatry), Heuyer, van Krevelen, Stutte, Lutz, or Michaux, all of whom have helped or are helping substantially to build the specialty. Equally rare is the American child psychiatrist who finds occasion to consult the zeitschrift für Kinderpsychiatrie, the Etudes de neuro-psycho-pathologie infantile, Infanzia anormale, and other periodicals, or the excellent monographs issuing from the Scandinavian countries—valuable depositories of significant investigations.

Anyone familiar with those publications or visiting the centers from which their contents originate knows that this seeming snub is not reciprocated by the men abroad. Our books and journals are read and quoted, and the European child psychi-

atrists are well acquainted with the work of their confrères across the ocean, at the same time a bit puzzled by our apparent lack of interest in their own contributions.

Of course, there is no deliberate snub on our side, nor is the described situation created by nationalism. There certainly is no intention of self-containment and, it is hoped, no smug conviction that we are in sole possession of the key to progress. We have, to be sure, developed fruitful ideas and practices of which we have a right to be proud but others have not remained inactive and much important research has been, and is being, carried out in other countries.

The answer lies mainly in the fact that ours is a unilingual nation and that foreignlanguage communications are therefore not generally accessible to American readers. In most of the other sciences, including adult psychiatry, these limitations are taken care of by reviews and abstracts of the international literature. The purpose of this editorial outpouring would be served if our teachers and reviewers made it a point to look beyond the linguistic frontiers and to give our students and readers the benefit of familiarity with the work in caild psychiatry done in other areas. It will then be easier to avoid the emparrassment caused by the question of a noted European child psychiatrist who asked: How do you explain that some of you Americans are so full of curiosity about the Rorschach responses of children in primitive cultureswhile there seems to be so little curiosity about the scientific productions of people engaged in the study of psychiatric problems of children in cultures so similar to yours?

L. K.

THE SUM OF PHILOSOPHY

Things happen.

-Aristophilus (Attrib.)

#### CORRESPONDENCE

#### **FUNKENSTEIN TEST**

Editor, The American Journal of Psychiatry:

SR: Having had experience with almost 2,000 Funkenstein tests, which we call the ANSR, "Autonomic Nervous System Reaction" (1), I would like to comment on the letters in the December issue of the Journal from Alberto DiMascio, and Manfred Braun, M.D.

In my experience and to my knowledge of the literature, no one has yet been able to utilize the Funkenstein as a prognostic agent in determining which tranquilizer or, for that matter, psychic energizer should be used. The basis of the test however, remains unaltered in that it is the only graphic means of putting the responses of the autonomic nervous system on paper, and having them fall into the 7 original categories, devised by Funkenstein.

One of the greatest difficulties in our experience has been the initial phase of the test when epinephrine is injected intravenously. It becomes rather a problem to estimate at which level the systolic pressure might rise in the next 30 seconds. Human error often leads to a false recording and sometimes the full significance of the test is lost. The second or Mecholyl phase of the test is not so dramatic and the response is less rapid and more easily plotted.

We have just received from England, equipment designed by H. J. Green, M.D. (2), Dept. of Physiology, Middlesex Hospital Medical School, London W 1, which is described as the "Winston Blood Pressure Follower." This provides a continuous recording of blood pressure with minimum discomfort to the patient and does not use the conventional arm cuff or arterial cannulation. A finger cuff instead is used and

systolic pressure is recorded continuously on a dial in the front panel, on a sphygmomanometer and on heat sensitive chart calibrated from 0 to 300 millimeters Hg.

The equipment is mobile and can be used in hospitals or offices very easily. It offers the most accurate determination of systolic pressure of any equipment we have ever used and the accuracy of the charting is extremely close and in several tests which we have repeated, having been done first by the "manual technique," as opposed to the continuous recording technique, we have seen changes otherwise missed.

The Funkenstein test has great usefulness in our experience. We feel that 85% of the 2,000 tested show clear indications as to what type of therapy is indicated. With more and more use of psychopharmarceuticals and with perhaps less resource to the physiological treatments such as insulin coma and electro shock therapy, the need for diagnostic acumen is still important.

We feel that the test should be more widely used, and by correct interpretation many patients will be directed into the proper line of treatment and thereby avoid unnecessary exposure to ECT or insulin coma, tranquilizers or energizers, unless they are indicated by the physiological responses of the patient's antonomic nervous system.

Edwin Dunlop, M.D., Assistant Medical Director, Fuller Memorial Sanitarium, South Attleboro, Mass.

#### **BIBLIOGRAPHY**

- 1. R. I. Med. J., 40: p. 96, Feb. 1957.
- 2. "Blood-pressure follower for continuous blood pressure recording in man." J. Physiol.: 130: p. 37P, 1955.

# 1043

#### **FUNKENSTEIN TEST**

Editor, The American Journal of Psychiatry:

SR: May I be allowed to comment on the recent exchange of letters in your correspondence column in regard to the Mecholyl (Funkenstein) test.

The crux of the issue surely is the meaning of this test in the light of current knowledge, and here the weight of evidence must be considered to be against the original empirical proposition that the blood pressure responses to mecholyl are meaningfully related to the clinical status of psychiatric patients or their prognosis.

One may summarize this evidence by pointing out the following. First, a considerable number of studies dealing with the question of the prognostic value of the test have not been able to confirm that any relationship exists between the mecholyl test response and prognosis, or produced contradictory and mutually irreconcilable findings. Secondly, as we have shown (J. Nerv. & Ment. Dis., November 1958), the blood pressure responses to mecholyl vary from day to day even when the test is administered to the same patient by the same investigator and under similar experimental conditions. In our series, in which the mecholyl test was administered by the same investigator to individual patients on 4 different days within a period of one week, only in 8 such 4-test series

out of 54 were the response patterns consistently identical throughout the 4 tests. Thirdly, as we have also shown in the same study, the blood pressure responses to mecholyl are actually dissimilar in a significant number of instances when read simultaneously from the right and left arms by two independent observers One also ought to note that some mecholyl test responses are indeed such as to be unclassifiable into any of the usual response patterns (see among others, Canad. M.A.J. 77: 116, 1957). The addition of an epinephrine test, which for all one knows may be equally variable, cannot conceivably alter the conclusions to be drawn from this evidence.

The acceptance of the Mecholy test places a heavy burden on the psychiatrist. If he repeats the test for reassurance, he will find that the results many augur a different prognosis for his patient from one day to another even before treatment of any kind is instituted, and that, furthermore, the patient's right sided readings may point to a good prognosis while the simultaneously read left sided response may indicate just the opposite.

Hanus J. Grosz, M D., Albert Einstein College of Medicine, Yeshiva University, New York 61, N. Y.

# 1-1-1

#### **NEWS AND NOTES**

DR. FREDERICK W. SEWARD.—Dr. Seward, former owner and director of the Interpines Sanitarium, established by his father in 1890 and closed in 1958, died at his home in Goshen, N. Y., March 4, 1960. He was a graduate from the N. Y. Homeopathic Medical College (1898) and was a former president of the N. Y. State Anti-Saloon League, and had been an active campaigner in the cause of Prohibition. He had been a fellow of the American Psychiatric Association.

1960 RESEARCH AWARD ANNOUNCEMENT.—The National Mental Health Research Fund of the Canadian Mental Health Association announces the second annual Research Award of approximately \$22,000 available this year. It is the intention to award this amount to one research scientist in whose name it will be held and paid as a guaranteed monthly stipend over a 2 to 4 year period.

Applications are invited from persons in Canada with appropriate scientific qualifications in any cf the professional disciplines directly related to mental health or mental illness. Applications should be made by informal personal letter setting forth the major research interests as well as the scientific background of the applicant, and should be sent not later than May 31st, 1960 to The Director, National Mental Health Research Fund, Canadian Mental Health Association, 11½ Spadina Road, Toronto 4, Ontario.

Third World Congress of Psychiatrix.—Under the auspices of the Canadian Psychiatric Association and McGill University, the Congress will be held June 4-10, 1961, in Montreal, Canada. English, French, German, and Spanish will be the official languages. The program has been designed to include the many vital interests in psychiatry today. Those wishing to present papers should communicate with the General Secretary, Dr. Charles A. Roberts, Allan Memorial Institute, 1025 Pine Avenue West, Montreal 2, P. Q., Canada. A Second An-

nouncement, to be released in September, 1960, will contain information about scientific films, registration, and accommodation.

DR. OVERHOLSER HONORED.—Dr. Overholser, Superintendent of Saint Elizabeths Hospital, Washington, D. C., was one of five to receive the President's Award for Distinguished Federal Civilian Service, the highest award the United States can give its career civil servants. Dr. Overholser was presented with the gold-medal award by President Eisenhower at the White House on March 8.

CUTTER LECTURER AT HARVARD.—Dr. Benjamin Pasamanick, professor of psychiatry and research director of the Columbus Psychiatric Institute and Hospital, has been named the Cutter Lecturer in Preventive Medicine for 1960 at Harvard University. He is the first psychiatrist appointed to the lectureship established in 1909 in the will of the late Dr. John Clarence Cutter. Dr. Pasamanick will give two lectures on May 4 and 5 on epidemiologic approaches to the investigation of childhood neuropsychiatric disorder.

Annual Workshop in Projective Drawings.—The workshop, conducted by Emanuel F. Hammer, Ph.D., and Selma Landisberg, M.A., will be held at the New York State Psychiatric Institute, New York City, from July 25 to 28. The suggested text for preparation is *The Clinical Application of Projective Drawings*, Charles Thomas, publisher. Further information may be obtained from Miss Selma Landisberg, 166 East 35th Street, New York 16, N. Y.

Institute for the Study of Crime and Delinquency.—The formation of the Institute, 605 Crocker-Anglo Bank Building, Sacramento 14, California, has been announced by its new president, Richard A. McGee, Director, California Department of Corrections. Its first project is the International Survey of Correctional Practice and

Research, under the direction of Dr. Clyde E. Sullivan, with offices at 300 Mercantile Building, 2082 Centre Street, Berkeley 4, California.

\*Aftermath of a Fire on a Geriatric WARD.—A 20% increase in death rate during 3 months following a fire on a geriatric ward of Topeka State Hospital is reported by Dr. D. R. Aleksandrowicz of that institute. In the emergency, most of the patients had been transferred temporarily to a vacant ward, those remaining being placed in other services. No physical injury to any patient resulting from the fire or evacuation was observed, and regular medical and nursing care was assured. It was thought that disruption of milieu and separation from familiar patient groups, personnel, and environment together with changes in routine and associated emotional reaction of personnel might be factors in the increased mortality. The patients involved were all suffering from advanced organic brain syndromes. These experiences emphasize the emotional needs of geriatric patients and the special features of nursing care they require; and it is suggested that on such a service the mortality (possibly also the morbidity) may be an index of emotional tension within the staff-patient community.

CANADIAN MENTAL HEALTH ASSOCIATION. -The Canadian Mental Health Assembly and 42nd annual meeting of the Canadian Mental Health Association will meet June 2-4, 1960, at the University of Alberta's Banff School of Fine Arts. Expected participants include Prof. Jas. Tyhurst of UBC, Prof. Paul Lemkau, Johns Hopkins U., Rev. Noel Mailloux, Dr. Keith Yonge, U. of Alberta, Miss Vivian Acord and Joseph R. Brown, Indiana Association for Mental Health, and Lawrence Linck, National Association for Mental Health. Further information may be obtained from the Conference Secretary, Canadian Mental Health Association, 11% Spadina Road, Toronto 4, Canada.

ALDOUS HUXLEY APPOINTED SLOAN VISITing Professor.—Aldous Huxley, for the past year professor-at-large at the University of California, Santa Barbara, arrived at the Menninger Foundation School of Psychiatry, Topeka, Kansas, on March 15 to assist with the teaching of psychiatric residents for about 6 weeks. He is the twelfth visiting professor at Topeka provided for by a grant from the Alfred P. Sloan Foundation to The Menninger Foundation.

AMERICAN ACADEMY OF GENERAL PRAC-TICE.—Dr. Ruth B. Freeman, president of the National Health Council, announced the Academy's election to membership in the Council. The more than 26,000 Academy members, all of them physicians in the general practice of medicine and surgery, join the 70 other member organizations in the Council to work for health protection and improvement.

GALESBURG STATE RESEARCH HOSPITAL.— The 10th Anniversary Symposium on "Research Approaches to Psychiatric Problems" will be held October 21-22, 1960. The Symposium will survey many currently promising biological, psychological, and sociological methodologies relevant to the problems of mental health. Interested prospective participants are invited to communicate as soon as possible with Thomas T. Tourlentes, M.D., Superintendent.

Symposium on the Psychophysiological. ASPECTS OF SPACE FLIGHT.—Outstanding authorities in psychiatry, physiology, endocrinology, and engineering will give papers at the forthcoming symposium on "The Psychophysiological Aspects of Space Flight." Sponsored by the School of Aviational Medicine, the meeting will be held at the Aerospace Medical Center, San Antonio, Texas, May 26-27, 1960. Southwest Research Institute is handling the arrangements. Lt. Col. Bernard E. Flaherty is the symposium chairman. The symposium proceedings will be published in the book form later this year. Further information may be obtained from Jack Harmon, Symposium Coordinator, Southwest Research Institute, P.O. Box 2296, San Antonio 6, Texas.

1046

Training in Management of Psychi-ATRIC PROBLEMS OF CHILDREN.—Boston University School of Medicine, Department of Psychiatry, in cooperation with Boston City Hospital, Department of Pediatrics, announces a training program in the management of emotional problems of children. The course is part-time and designed for practicing pediatricians and for all practicing physicians who are interested in problems of childhood. It is made possible through a grant from the Public Health Service, for training of physicians in psychiatry. For further information write to Box 1, Boston University School of Medicine, 80 East Concord St., Boston 18, Mass.

ARGENTINE SOCIETY OF PSYCHOSOMATIC MEDICINE.—The Society announces the appointment of a new governing board. The newly elected president, Dr. Mauricio Knobel, is an APA member. The aims of the society, which meets monthly in Buenos Aires, is to encourage an exchange of scientific ideas throughout the world. Contacts should be made to Sociedad Argentina de Medicina Psicosomatica, Honduras 4135, Buenos Aires, Argentina.

Society of Biological Psychiatry.—The annual meeting of the Society will be held in Miami Beach, Florida on June 11-12, immediately preceding the clinical meeting of the American Medical Association. An interesting program has been arranged and the Academic Lecture will be given by Hans Hoff, M.D., Professor and Head of the Department of Psychiatry of the University of Vienna.

He has chosen for his subject: "The Role of Biological Treatment in Comprehensive Psychiatric Management."

#### AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

The American Board of Psychiatry and Neurology, Inc., and its Committee on Certification in Child Psychiatry, announce the certification of the following as Diplomates in Child Psychiatry.

FEBRUARY, 1959

Allen, Frederick H., 3915 Henry Avc., Philadelphia 29, Pa. Curran, Frank J., 55 Bast 86th St., New York 28, N. Y.

Grug, Othilda, 3125 Harvey Ave., Cincinnati 29, Ohio. Langford, William S., Pediatric Psychiatric Clinic, Babies Hospital-4-E-12, 622 West 168th St., New York 32, N. Y. Lippman, Hyman S., Amherst H. Wilder Child Guidance Clinic, 670 Marshall Ave., St. Paul 4, Minn. Robinson, J. Franklin, 355 South Franklin St., Wilkes-

OCTOBER, 1959

Abrams, Alfred Lawrence, 10 Links Dr., Lake Success, N. Y. Adatto, Carl P., 6205 Garfield St., New Orleans, La.
Alpern, Evelyn E., Children's Hospital, 219 Bryant St.,
Buffalo 22, N. Y.

Anderson, Forrest Nelson, 14317 Huston St., Van Nuys, Calif.

Apffel, Philip R., 82 Clinton Ave., Newark 5, N. J. Balikov, Harold, 679 North Michigan Ave., Chicago 11, Ill. Balser, Benjamin Harris, 872 Fifth Ave., New York 21,

Beiser, Helen R., 737 North Michigan Ave., Chicago 11, Ill. Benjamin, Anne, 664 North Michigan Ave., Chicago 11, Ill. Berlin, Irving Norman, 731 Buena Vista Ave., W., San Francisco 17, Cal.f.

Berman, Sidney, 3000 Connecticut Ave., N. W., Washington 8, D. C

Blau, Abram, The Mount Sinai Hosp., 1176 Fifth Ave., New

York 29, N. Y.

Blom, Gaston E., University of Colorado School of Med., 4200 East 9th Arc., Denver 20, Colo., Brockbank, Thomas William, 2 Greenridge Ave., White Plains, N. Y.

Chess, Stella, 1165 Fark Ave., New York 28, N. Y. Comiy, Hunter Hall, 5475 Wcodward Ave., Detroit 2, Mich.

Conn, Jacob Harry, 812 Medical Arts Bldg., Baltimore 1,

Cramer, Joseph Benjamin, Albert Enstein College of Med.,

Dept. of Psychiatry, Eastchester Rd. and Morris Park Ave., New York 61, N. Y. Cunningham, James Morrow, 141 Firwood Dr., Dayton 30,

Ohio. Dudley, Frederick D., Front and Jackson Sts., Media, Pa.

Durfee, Marion B., 40 East Dayton, Pasadena, Calif.
Falstein, Eugene I., 25 East Washington St., Chicago 2, Ill.
Frankl, George, Child Guidance Clinic of Forsyth County,
Graylyn Court, Robin Hood Rd., Winston-Salem, N. C.

Friend, Maurice R., 262 Central Park W., New York 24, N. Y.

Gardner, George Edward, 295 Longwood Ave., Boston 15,

Mass.
Geiger, Sara G., 822 West Kilbourne Ave., Room 515, Milwaukee 3, Wis.
Goodman, Soll, Westchester Center for Child Guidance, 17
North Chatsworth Ave., Larchmont, N. Y.
Green, Sidney Lewis, 600 East 18th St., Brooklyn 26, N. Y.

Greenberg, Harold A., 664 North Michigan Ave., Chicago

Greenwood, Edward D., 3617 West Sixth St., Topeka, Kan. Herskovitz, Herbert H., 609 Suburban Square Bldg., Ardmore,

Hertzman, Jack, Doctors' Bldg., Room 302, Garfield Pl., Cincinnati 2, Ohio.

Hirschberg, Cotter, 2221 West Sixth Ave., Topeka, Kan. Hulse, Wilfred C., 350 Central Park W., New York 25, N. Y.

Jessner, Lucie, North Carolina Memorial Hosp., Chapel Hill, N. C.

Josselyn, Irene M., 664 North Michigan Ave., Chicago 11, .

Kaplan, Elizabeth Bremner, Parke Towne Place, Apt. 1706 South, 2200 Ben Franklin Parkway, Philadelphia 30, Pa. Kaplan, Maurice, 1015 Bobolink Rd., Highland Park, Ill. Kaplan, Samuel, 23 Bay State Rd., Boston, Mass.

Kaufman, Bernhard, 161 West Wisconsin Ave., Milwaukee 3, Wisc.

Kazan, Avraam T., 2 Greenridge Ave., White Plains, N. Y. Kelly, William H., Cass Bldg., South Walnut St., Lansing 13, Mich. Kenworthy, Marion E., 1035 Fifth Ave., New York 28,

N. Y.

Kirkpatrick, Milton E., Monmouth Medical Center, Long Branch, N. J.

Knowlton, Peter, 1700 Bainbridge St., Philadelphia 46, Pa. Kulka, Anna M., 10640 Santa Monica Blvd., West Los Angeles 25, Calif.

Lambert, John F., Four Winds, Katonah, N. Y. Laufer, Maurice W., 1011 Veterans Memorial Pkwy., Riverside 15, R. I.

Levitin, Elizabeth I Bldg., Skokie, Ill. MacDougall, Old Orchard Professional

Loomis, Earl A., Jr., 3041 Broadway, New York 27, N. Y. Lourie, Reginald S., Children's Hosp. of the District of Columbia, 2125-13th St., N. W., Washington 9, D. C. Lytton, George J., 2200 McCoy, Kansas City 8, Mo.

Harold E., 1166 Grizzly Peak Blvd., Berkeley 8, Calif.

Marasse, Henry F., 147 Mercer Ave., Hartsdale, N. Y. Markey, Oscar B., 10300 Carnegie Ave., Cleveland 6, Ohio. Marsh, Elias J., State Office Bldg., Hartford 15, Conn. Mohr, George Joseph, Mount Sinai Hosp., 110 North Hamel Rd., Los Angeles 48, Calif.
Ness, Claire M., 2050 E. 96th St., Cleveland 6, Ohio.

Pavenstedt, Eleanor, 80 E. Concord St., Boston 18, Mass. Pearson, Gerald H. J., B-1023, The Presidential Apts.,

Philadelphia 31, Pa.

Philbrook, Anna L., 121 S. Fruit St., Concord, N. H.

Rabinovitch, Ralph D., Hawthorn Center, 18471 Haggerty

Rd., Northville, Mich.

Rexford, Eveoleen N., 315 Dartmouth St., Boston 16, Mass. Rose, John A., 1700 Bainbridge St., Philadelphia 46, Pa. Ross, John Robert, Jr., 600 S. State St., Syracuse, N. Y. Ross, Mabel, Public Health Service, 42 Broadway, New York 4, N. Y.

Ryan, John Francis, 399 Laurel St., San Francis 6 13, Calif. Schaefer, Phyllis D., 4953 McKean Ave., Philadelphia 44,

Segenreich, Harry M., 6 North Michigan Ave., Chicago 2, Ill. Shirley, Hale F., Stanford-Palo Alto Med. Center, Stanford, Calif.

Sobel, Raymond, 280 Mamaroneck Ave., White Plains, N. Y. Struthers, J. N. Pierson, Box A, 3501 Willis Rd., Ypsilanti,

Stubblefield, Robert L., 5323 Harry Hines Blvc., Dallas 35. Tex.

Susselman, Samuel, 344 Parnassus Ave., San Franceco 17. Calif.

Sylvester, Emmy, 2674 Filbert St., San Francisco 23, Calif. Szurek, Stanislaus Andrew, 1375 Third Ave., San Francisco 22, Calif.

Tarjan, George, Pacific State Hosp., Box 100, Famora, Calif. Thompson, Jean Archibold, Bureau of Child Guidance, 80 Lafayette St., New York 13, N. Y.

Valens, William Lyall, Parliament Bldgs., Victoria B. C., Canada.

Vogel, B. Frank, 808 Park Ave., Manhasset, IV. Y.

Weatherly, Howard E., 133 South Lasky Dr., Feverley Hills, Calif.

Weil, Annemarie P., 11 East 68th St., New York 21. N. Y. Weinreb, Joseph, 523 Ward St., Newton Center 59, Mass. Welsch, Exie Elizabeth, 160 East 65th St., New York 21, N. Y.

Wise, Louis J., 110 North Hamel Rd., Los Argeles 48, Calif. Zwick, Paul A., Rochester Child Guidance Center, 51 Gibbs St., Rochester 4, N. Y.

#### FINE THREADS

A man bade a spinner spin fine threads. The spinner span fine threads, but the man declared that the threads were not good and that he wished the very finest of fine threads.

The spinner said, "If those are not fine enough for you, then here are some others that will suit you." And she pointed to a bare spot.

The man declared that he could not see them.

The spinner replied, "The fact that you cannot see them proves that they are very fine; I can't see them myself."

The fool was rejoiced, and ordered some more of the same thread, and paid down the money for it.

> -Tolstoy (who was also looking for fine threads).



# المسرية

#### **BOOK REVIEWS**

Symposium on Schizophrenia. Edited by L. Lopez-Ibor. (Madrid: Consejo Nacional De Investigaciones Cientificas, 1957, pp. 398.)

In this volume are published the lectures giver? at the Symposium on Schizophrenia held in 1955, at the Neuropsychiatric Clinic of the Madrid General Hospital, and sponsored by the National Research Council. It is edited by Dr. Lopez-Ibor, Head of the Clinic and initiator of the symposium. It is unfortunate that only the lectures are published; it would have been desirable to present the discussions as well. The volume contains 24 papers, delivered by 20 authors, of whom 8 were invited from outside of Spain: 2 Portuguese, one French, 2 Germans and 3 Swiss.

It is not possible, in this review, to summarize all 24 chapters. There is a wide range of content and also of quality, though most of the papers are of high calibre. Interesting for the American reader is that this volume gives clear information about the current trends of thought of the official psychiatry in Spain, of which so little is known in this continent.

Since the beginning of this century, Spanish medicine has been strongly influenced by Germany and this impact has been strongest on psychiatry. This symposium clearly shows that this adherence still persists very strongly. As an example it could be mentioned that neither E. Minkonsky nor Sechaye are quoted by any of the Spanish authors. Only the 2 French speakers invited, H. Ey and Ch. Durantd give credit to these authorities.

As shown by this book, contemporary academic psychiatry in Spain-with some exceptions—is descriptive, phenomenological and existential anthropological, closely following Jasper, K. Schneider, Wyrsch and Biswanger. No interest is shown in psychodynamics or genesis of symptoms. Schizophrenia is conceived as a "psycho-organic" process, a "somatosis" of endogenous origin. The basic manifestation is a "disturbance of the activity of the self," in terms of "being-in-the-world" that expresses itself by alterations of the emotional life which later become fixated in personality disorders (L. Ibor). Characteristically the only contribution devoted to psychotherapy is a chapter written by Ch. Durantd. the Director of "Les Rives de Prangins," Switzerland. There are, however, 4 dealing with the biological and physical treatments, including leucotomy and its technique.

As it is inevitable in such a collection, there is much overlapping and repetition. The reviewer feels that much of this could have been avoided if some of the authors could have indulged less in theoretical discussions and speculations of the literature, and concentrated in the discussions of their own opinions and conclusions as based on objective facts derived from their personal observations and research.

The non-Spanish psychiatrists are among the best known leaders of continental psychiatry; though all their contributions are very valuable, they deal with their already well known points of view, without adding anything essentially new to their conceptions. Two contributions to this symposium by Barahona and Polonio, both from Lisbon, should be mentioned; they deal respectively with acute schizophrenia, and with the different types of evolution of the psychosis.

The typographical presentation of the book is good. Unfortunately the great number and kind of misprints makes the reading at times very disturbing, for instance "chronic" instead of "clonic," "fusion" for "function" and so on. In addition to the general index of chapters, there is an excellent index of subjects and another of the authors quoted in the text.

On the whole, this is an excellent book that gives a quite complete idea about how the problems of schizophrenia are approached by an important group of European psychiatrists. Both the National Research Council of Spain and Dr. Lopez-Ibor deserve appreciation for the service rendered.

M. Prados, M.D., Montreal, P. Q.

International Review of Criminal Policy, No. 13, October 1958. (United Nations Publication.)

This volume contains another topical bibliography of current technical literature relating to the prevention of crime and the treatment of offenders. It is the most exhaustive review of its kind and its value is augmented by the inclusion of an author index.

The remainder of this issue deals with the question of prostitution. There are authoritative accounts of the existing situation in a number of selected countries.

K. G. Gray, Toronto, Canada

049

Dr. Kelly of Hopkins. By Audrey W. Davis. (Baltimore: The Johns Hopkins Press, 1959, xii + 242 pp. ills. \$5.00).

Dr. Kelly was one of "The Four Doctors" who founded the John's Hopkins School of Medicine, that opened its doors to students in 1893. Kelly was the youngest of the four, Osler the oldest. The first class included 15 men and 3 women, the Hopkins being the first school in the United States to admit women. By 1893 the faculty had grown from 4 to 15.

The original four—in order of appointment, Welch (pathology), Osler (medicine), Halsted (surgery), Kelly (gynecology)—have been immortalized in Sargent's splendid painting that hangs in the Welch Medical Library at the medical school.

It is a singular fact that ample biographies of the first three of the founders were written long ago, also biographies and autobiographies of numerous others of the early Hopkins staff; Kelly alone, until now, had remained without the story of his life being told in book form. This is all the more remarkable because he was the most spectacular of the great Four and one would have thought that because of the unique features of his personality and his life he would have been the first to attract a biographer.

But Kelly had chosen the one who would tell his story, and one peculiarly suited to do so. Miss Davis was for twenty years his invaluable secretary, friend and collaborator and to her he bequeathed his private papers and the note books he had filled with his experiences and observations over the years. Besides there were the day-to-day conversations from which she quotes freely, as well as from a rich correspondence, the Hopkins archives and other sources. The result is a fascinating book. Writing it was a labor of love. In her pages Dr. Kelly still lives.

He was a born naturalist. From early boyhood he had ranged far and wide over the country collecting and studying specimens of all kinds, his chief delight being reptiles. He had wished to spend his life as a student of nature but yielded to his father's influence and turned to medicine as the more useful, not to say remunerative career. He remained, however, a devoted naturalist by avocation throughout his life.

From the first in his years of practice Kelly's main interest was gynecology, and here his exceptional talent was promptly apparent. He was but 31 years old and only 7 years out of medical school when he was called from Philadelphia to Baltimore to head the depart-

ment of gynecology at the new medical school of the Johns Hopkins University; and here he developed an unequalled operative pattern that made him famous throughout the world. So great was the demand for his services that he was obliged to establish a private hospital of his own near his residence to accommodate the patients that thronged to his clinic.

After 30 years as professor of gynecology he retired from the medical faculty, but continued with his numerous private interests, writing, lecturing, traveling and exploring nature and stocking his private museum and library. He performed operations until his eightieth year.

Kelly believed that the labourer is worthy of his hire and he was the only one of the Four Doctors who made money by practicing his profession. Rich patients were charged high fees—the standard figure for an obstetrical case was \$500-but he also tempered the financial wind to the shorn lamb, and he refused no patient who could not pay. His charities of many kinds were extremely large. Not long after the medical school opened, expanded facilities became necessary, especially in the gynecological department. To meet this need Kelly wrote his personal cheque for \$5,000; sometime later another contribution of \$10,000. He gave several thousand books to the medical library. To illustrate his books he brought the distinguished German artist, Max Broedel to the Hopkins, and was thus responsible for establishing the first department of medical art with Broedel the first professor in the world of such a department.

The full title of Miss Davis' book is Dr. Kelly of Hopkins, Surgeon, Scientist, Christian. This may seem an extraordinary caption, but it is safe to assume that it is as Dr. Kelly wouldhave had it. It is not impossible that he may have suggested the subtitle. It would be difficult to conceive of four giants of medicine, brought together to collaborate in launching a great medical school and hospital, each of whom differed so strikingly from the others in personal characteristics; and yet whose separate undertakings fitted so congenially together in pioneering the heroic age of medicine, who glorified in each other's achievements, and as the years wore on manifested such strong mutual affection. But Kelly's personality contrasted with that of each of the other three particularly in his conspicuous, even obtrusive religious habits and practices. If ever there was a "God intoxicated" man it was Howard Kelly. Christian doctrine and belief had Jecome an overmastering influence in his ife from boyhood on. He recalled a youthful experience during an interlude in his medical course, spent on a western ranch. On a winter's night, bedfast with snow blindness in the course of a three-day blizzard "there came as I sat propped up in my bed an overwhelming sense of a great light in the room and of the certainty of the near presence of God, lasting perhaps a few minutes and fading away, leaving a realization and a conviction never afterward to be questioned, . . . a certainty above and beyond the processes of human reason."

On the night of the day he graduated in medicine the young physician noted in his diary: "I dedicate myself—my time—my capabilities—my ambition—everything to Him. Blessed Lord, Sanctify me to Thy uses. Give me no worldly success which may not lead me nearer to my Savior."

Later, at the Hopkins his religious views were so contrary to those prevailing among the staff that his colleagues wondered how so brilliant a man could harbor such beliefs. Finally they gave it up; he was an enigma. Kelly began and ended every day with an hour of bible study and prayer. "Never," writes his biographer, "did Kelly pick up a scalpel without prayer that his hand be guided. . ." Riding in a taxicab, when halting at a red light he woulc introduce some earnest remarks with "Cabby, I hope when you and I come to the gate of heaven, the light will be green."

Dr. Kelly died in January 1943 six weeks before his eighty-fifth birthday. He was the last of the Four Doctors to go. His last words: "My Bible, Nurse, give me my Bible." There seems to be no question that he firmly believed in immortality. In his last textbook, Gynecology, finished at the age of 70, Kelly wrote: "My pleasant task is done; the shadows fall well aslant my page; it is almost time to draw the curtains and turn on the Great Light."

Dr. Kelly's seventy-fifth birthday was the occasion of a great gathering of his friends and colleagues for a testimonial dinner. Welch, the only other survivor of the immortal Four, lay mortally ill in the Johns Hopkins Hospital. He sent a letter, one of the great letters of all time, in which he happily and touchingly reviewed "forty-four years of our uninterrupted association, friendship and affection and love." And then, as part of his tribute, "I have always felt, as did Osler, that you did more than any of us to extend the fame of the Johns Hopkins University to distant parts; and the hospital offered no greater attraction than the opportunity to see you and your work, and the new

methods which you were so rapidly developing."

A year later Welch was gone. Speaking of his cherished friend Kelly said, "It is very sad and strange that at the end, Christian faith demands some expression of hope. He was so lovable that I hope some light entered before the end." (!)

C. B. F.

CLINICAL STUDIES IN CULTURE CONFLICT.
Edited by Georgene Seward, Ph.D. (New York: Ronald Press Co., 1958, pp. 598. \$7.00.)

This book is a product of the University of Southern California, where Dr. Seward is associate professor of psychology. It is a sequel to the editor's *Psychotherapy and Culture Conflicts* (New York: Ronald Press, 956), in which she presented the principle psychological differentials among certain ethnic groups. The current volume illustrates in greater length and detail how these psychological factors influence personal-functioning and psychotherapy.

Consisting of a series of case studies involving conflicts associated with ethnic minority groups, this work shows the value of a multidisciplinary approach to current problems in the social sciences. There are 22 chapters, written by 20 clinical psychologists, 3 psychiatrists, and 2 anthropologists. In order to integrate the material the editor has written a brief preview and postscript for each of the 5 major sections. Part One has an introductory chapter by the editor, in which she discusses various personality features and culture conflicts; the second chapter is devoted to methods of diagnostic evaluation and testing. Part Two, a collection of case studies relative to the Negro's role in this country, presents the Negro as having the greatest problems and the most extreme form of ambivalence because he lacks a specific sub-culture of his own. Part Three deals with the American Indian, while Part Four treats of the various groups having a Spanish legacy, such as Mexican-Americans, Puerto Ricans, and Filipinos. Part Five is devoted to the Japanese-American, and the concluding part deals with the Jews and Armenians of European background.

The book strongly suggests that the human raw material does not differ with culture or sub-cultures, but that each individual culture tends to select and develop certain aspects of the total potential personality. It is emphasized that the therapist must increase his sophistication about cultural backgrounds in order to give the best care to his patients.

051

Psychotherapists of all schools of thought will find this work helpful in the specific areas mentioned above.

> ERIC T. CARLSON, M.D., New York Hospital-Cornell University Medical College.

DER GANGSTER. By Hans von Hentig. (Berlin: Springer-Verlag, 1959, pp. 245. DM 19.80.)

Dr. von Hentig is a psychologist-sociologist, and in the present volume offers a criminalpsychological study of the American gangster. It is a fascinating book, and at the same time a shocking one. The political and social corruption that makes the gangster possible is revealingly uncovered in these pages, although this is by no means the main task of the author. It sounds, or rather, reads even more depressingly in German than it does in English, that one gangster "In 44 Jahren seines Lebens war der Gangster 44mal verhaftet worden und jedesmal freigekommen" (p. 220). This is a familiar pattern. Our outmoded penology, and our antiquated approach to the criminal are painfully apparent when one reads a book like this. But Dr. von Hentig's purpose is not to reform but to understand—an indispensable condition or prerequisite for anyone interested in reform, and so his inquiry is aimed principally at discovering the characteristics of the gangster. He considers the genealogy of the gangster, his cultural milieu, his women, the functions and operations of the gangster, his defensive techniques, his bodybuild, his so-called primitive drives, his infantilism, his intelligence and related traits, his superstitions and symbolic behavior, attitudes toward death, and the like.

Dr. von Hentig occasionally falls into some unexpected naivetes, as in his belief in "throwbacks" and "atavisms," beliefs which belong in the same class as "phlogiston" and "ghosts." In fact, there is a little too much of this, and this rather spoils an otherwise valuable, book. It is not going to help us very much to be told, as Dr. von Hentig finally concludes, "This, then, is the gangster. A manicured savage, clothed by the best of tailors. The cannibal with the cadillac. The Stone Age Man in our midst, the barbarian in his deepest heart, and the beast of prey in his blood." Nevertheless, Dr. von Hentig has written a socially, if not psychologically, valuable analysis of one aspect of the contemporary social scene.

> Ashley Montagu, Ph.D., Princeton, N. J.

GROUP PSYCHOTHERAPY: THEORY AND PRAC-TICE. 2nd. Ed. By J. W. Klapman. (New York: Grune and Stratton, 1959; pp. 281, \$6.75.)

The second edition of this useful book is a comprehensive, well balanced survey of the history, current theoretical concepts and major forms of practice of group therapy. About a third of the book is devoted to an historical survey and review of theoretical concepts. The latter are drawn chiefly from psychoanalysis and group dynamics. The remainder describes all the major current forms of group therapy. Each method is fairly presented, with supportive illustrations. They are arranged roughly in terms of amount of cirectiveness, on the assumption that this parallels the degree of disorganization of the patients for which each is most suited. The more disorganized the patient, the more explicit the direction he needs. Two brief chapters at the end, which give the impression of being tacked on for completeness, consider assessment of the results of therapy and milieu therapy. The former is hopelessly inadequate; the latter, though brief, is sufficient in view of the fact that many aspects of milieu therapy had been treated in earlier chapters.

Perhaps the outstanding feature of this book is its general good sense. The author rightly maintains that successful psychotherapy must engage intellectual as well as emptional aspects of the patient's personality and stresses the re-educative aspect of all forms of psychotherapy. While there is nothing in the book that is startling, original, or incisive, neither is there anything that is biassed or unfair, and the author's wide clinical experience is evident in his evaluations throughout. There is an adequate bibliography.

This book will be of the greatest use for persons who desire a sound general orientation to the field of group therapy. In its unpretentiousness, good common sense and cimical acumen, it is a fitting monument to its author.

JEROME D. FRANK M.D.,

Baltmore, Md.

MOTIVATION: A SYSTEMATIC REINTERPRETA-TION. By Dalbir Bindra. (New York: Ronald Press, 1959, pp. 361. \$5.50.)

For the clinical psychiatrist it is I kely that only a few parts of this book will be of interest. The chapters on the nature of the problem of motivation, on motivational phenomena and on human motivation present the theoretical and experimental issues of the subject in a tesse, condensed way. For the theoretician an ex-

perimental psychologist or psychiatrist the entire book offers a resumé of the data and arguments in a manner which is quite useful. The topics, in addition to those mentioned, are on goal direction, the development of motivation activities, an analysis of reinforcers, the factors determining habit strength, the role of sensory cues, arousal and behavior and the role of blood chemistry.

The book is restricted to phenomena that are "purposive" or "goal-directed"; all old experimental data are reinterpreted in the light of newer hypotheses and the up-to-date experimental data on animals leading to modern theories gives the author the opportunity to evaluate the new theories. He rejects instinct theory and drive theory as redundant descriptions which are not explanatory. He is also dissatisfied with the "neurologizing" of some experimenters.

The attempts at making psychoanalytic theory an overall psychological system did not seem to attract Bindra even though he deals with identical, if not parallel, phenomena. For example, he discusses "functional autonomy" but only the experimental data on animals involved and not the psychoanalytic theory.

Those students and researchers accepting Bindra's approach will find the book most useful as a reference source and as a systematic attempt to clarify the issues; those whose approach is different will have to answer the questions he raises in the polemic part of his book.

NORMAN REIDER, M.D., San Francisco, Calif.

A Manual for EEG Technicians. By Rhoda Feinstein Milnarich. Foreword by Robert S. Schwab. (Boston, Mass.: Little, Brown and Co., 1958, pp. 222. \$5.50.)

This 222 page book with 83 illustrations fills a gap in an area which has not been covered since Ogilvie's Manual of Electroencephalography of 1945. It is written essentially to help the technician become oriented to the job and also improve the technique of taking an electroencephalogram which demands skill and patience. The book explores the difference in the role between technician and electroencephalographer as well as the various methods on taking an EEG. It plods a middle course in areas which are some times obscured by more heat than enlightenment.

The importance of the relationship between patient and technician is given sufficient attention. The chapter on artifacts is especially helpful and the succinct chapter on electronics provides easily assimilated facts about electrical aspects of the EEG.

A variety of very practical suggestions are given in the book; *i.e.*, what to do and how to describe a seizure during an EEG, how to add to the medical history for the electroencephalographer. A glossary of terms in the back of the book adds to its usefulness. For the beginning technician this book is very helpful and it is a worthwhile addition to the EEG lab.

A. N. Browne-Mayers, M.D., New York, N. Y.

GRUPPEN PSYCHOTHERAPIE. By Zerka T. Moreno, et al. (Bern: Hans Huber, 1957. \$4.00.)

This is a series of 20 papers, 5 of them in English. The other 15 are in their original language, mainly German or French. Brief English abstracts are included. The articles are fairly general in interest. The English articles include one by George Bach presenting his field theory which is a variant on Kurt Lewin with considerable elaboration and some rather general illustrations. Nathan Ackerman's paper discusses the historical and social origin of group psychotherapy with some emphasis on the failures of psychoanalysis. Rudolf Dreikurs has an article about the relationship of group psychotherapy to the democratic process which defines the psychotherapeutic group as a relationship between equals. W. Schindler of London is more concerned with the fact that group psychotherapy has strong resemblances to a recapitulation of the original family group and his belief that the transference problems are identifiable in this pattern. Mrs. Zerka T. Moreno presents a paper on case work with psychodrama as utilized with pregnant mothers. Several of the abstracts are intriguing. The German authors have presented several formulations of the dynamics within the group but in general there is little which has not been in the English literature before this time. Both J. L. Moreno and Martin Grotjahn have written papers in German for this periodical but again there seems to be little which differs from their previous formulations.

> CARL A. WHITAKER, M.D., Atlanta, Ga.

A History of Embryology. By Joseph Needham. (New York: Abelard-Schuman, 1959, pp. 304. \$7.50.)

This is the second revised edition of a book originally published in 1934. At that time the

1053

work established itself as the leading arbeit of its kind, and now, with the assistance of Arthur Hughes, lecturer in anatomy at Cambridge, the work has been brought up-to-date and enlarged. It is a most welcome revival of a book that has been too long out of print, for it is one of the most readable of books, and certainly the most informative on the subject with which it deals. It is not only a valuable contribution to the history of science, but quite as eminently so an illuminating history of the force with which culture conditions thinking.

Ashley Montagu, Ph.D., Princeton, N. J.

THE GROWTH OF LOGICAL THINKING FROM CHILDHOOD TO ADOLESCENCE. By Bärbel Inhelder and J. Piaget. (Translated by Anne Parsons and S. Milgram.) (New York: Basic Books, 1958, pp. 356. \$6.75.)

The first part of this book consists of a series of experiments by Inhelder, each followed by a theoretical analysis by Piaget. The analyses and the final 3 chapters represent an attempt to interpret the experimental (or, rather, observational) data in terms of Piaget's theory of the development of thinking from childhood to adolescence.

The book is not easy to follow for several reasons. In the first place, it presupposes some knowledge of Piaget's earlier work on cognitive development, some acquaintance with his views on the relationship of psychology and logic, and some familiarity with the symbolism of formal logic. There is a helpful introduction by one of the translators which briefly sets the stage for the reader; even so, readers unfamiliar with Piaget's writings will find this a difficult book.

A second difficulty arises from Piaget's use of familiar technical terms in unfamiliar ways. For example, in Piaget's system the term "operation"-a key concept in Piaget's presentationhas a specialized meaning quite unlike that assigned to it in current North American psychology. For Piaget, concrete operations are actions that are "internalized," "integrated with other actions to form general reversible systems," and "accompanied by an awareness on the part of the subject of the techniques and coordinations of his own behavior." The focus of the book is on the transition from reliance on concrete operations, characteristic of children between 7 and 11 years of age, to the utilization of formal operations, apparent in the thinking of adolescents. Whereas concrete operations are related to the logic of classes and relations, formal operations are related to propo-★itional logic. Ability to think in terms of

propositional logic (for example, to recognize what conclusions may be drawn from certain premises) appears, according to the authors, only at about the age of 12 years.

A third difficulty facing the reader is primarily a methodological one. A psychologist accustomed to statistical analyses of experimental findings is likely to feel dissatisfied and baffled by the authors' presentation of data. Each of the first 15 chapters describes an experiment in which the subjects are set a task, the solution of which is based on a simple scientific principle, e.g., the equality of angles of incidence and reflection, the conservation of motion in a horizontal plane. A description is given of the behavior of subjects at various stages of development, illustrated by sample protocols. One cannot tell, however, how many subjects were tested at each age level; nor is there any clear indication of the amount of variability found among children of any one stage of development. Consequently, there are problems in interpretation. One may suspect, for example, that differences between Piaget's stages of development are not as clear-cut as the book sometimes seems to suggest. The data, as presented, do not allow the reader to check suspicions of this kind.

The importance of the book resides largely in Piaget's presentation of a set of logical schemata to assist in the study of thinking as a psychological process. Since it concentrates on the stage of development at which formal operations first appear, the book allows Piaget to expound and illustrate his system more fully than he has done elsewhere. Moreover, the ingenious series of studies by Inhelder can hardly fail to stimulate further research and to lead to an increased interest in Piaget's attempt to provide a theoretical framework for the study of thought processes.

RICHARD H. WALTERS, Ph.D., University of Toronto.

THE ORIGIN OF SPECIES. By Charles Larwin. Edited by Morse Peckham. (Philadelphia: University of Pennsylvania Press, 1959, pp. 816. \$15.00.)

This year, 1959, is the centennial of the publication of Darwin's Origin of Species, a centennial which is being celebrated all over the civilized world. During Darwir's Ifetime 6 editions of the work were published, and while it was known that the author had made many changes between the first and the sixth edition no one really had an idea as to how extensive these changes were. This lacund is now filled by Professor Peckham's prodigious industry. We have now, for the first time, a

complete variorum text in which variants down to a single comma are recorded from edition to edition in such a manner that within a few minutes the inquirer is able to determine how any particular word or sentence varies from edition to edition. The text of the *Origin* is not here, that would have swelled the volume to enormous dimensions, but anyone having a copy of any edition of the text can use Brofessor Peckham's admirable work to check on the changes. To students of the mind of Charles Darwin and his development, as well as to scholars of Darwiniana and Darwinism the book will be invaluable.

Ashley Montagu, Ph.D., Princeton, N. J.

WE CALL THEM CRIMINALS. By Ralph S. Banay. (New York: Appleton-Century-Crafts, Inc., 1959, pp. 291. \$3.95.)

Presenting the complexities of criminal behavior as illuminated by the motivational insights of dynamic psychiatry in a short, readable book, is an impossible task. Doctor Banay tackles it with courage, conviction and a wealth of experience in the correctional field. He reviews for his lay reader such characteristics of our culture as the preoccupation with violence and the movement toward a matriarchy. He gives a short course in the vicissitudes of child rearing and an introduction to general psychodynamics. Alcoholism is singled out for special attention because of its contribution to antisocial behavior. The theme is that man is manifestly weak, finite and fallible. Each individual has antisocial impulses that are normally held in control. Criminal behavior represents a surrender to human defects and frailty. Very little crime is attributed to mental illness as such, but is the result of a violent aggressive discharge in an emotionally unstable individual. A series of short interesting case histories is used to illustrate the above. Treatment techniques are dealt with extremely briefly in a chapter entitled, "Uses and Abuses of Brain Washing." I would have personally preferred a more straightforward presentation

of treatment without the easily misunderstood analogy.

The final chapter, "A Program for the Future," is a good authoritative statement of perhaps the most popular approach of psychiatrists to the penal problem. It recommends abolition of prisons as such with their obsolete philosophy, frame of reference, physical plants and personnel practices. In their stead, two types of institutions should be planned. One would be a protective work colony for the untreatables and the other would be a full-fledged therapeutic institution blending characteristics of hospital, school and workshop.

While one can take exception with Doctor Banay about his model for criminal behavior and his recommendations for correction, there certainly can be no disagreement with his desire to force the general public to consider the intricacies of motivation of criminal behavior.

Frank T. Rafferty, M.D., Salt Lake City, Utah.

THE TEACHING AND LEARNING OF PSYCHO-THERAPY. By Rudolf Ekstein, and Robert S. Wallerstein. (New York: Basic Books, Inc., 1958, pp. 334. \$6.50.)

This book represents the distillation of nearly 10 years of experience in teaching psychoanalytic psychotherapy at The Menninger School of Psychiatry. The focus throughout is upon teaching and learning psychotherapy, a human enterprise which takes place within the limitations imposed by the fallibility of teacher, student, patient, administrator, and the sociopolitical structure of the training situation. In keeping with the title, examples from different points in the treatment-supervisory process are presented and are diagnosed and discussed in terms of problems in the teaching and learning of psychotherapeutic skills.

This important and well-written work terminates with a carefully selected bibliography on training in the different clinical disciplines.

Bernard Lubin, Ph.D., Indianapolis, Ind.

#### IN MEMORIAM

#### RICHARD SHERMAN LYMAN 1891-1959

Dr. Richard Sherman Lyman, former Chairman of the Department of Neuropsychiatry, Duke University School of Medicine, died at his home in Montclair, N. I. on June 13, 1959, at age 68. A descendant of Richard Lyman, one of the founders of Hartford, Connecticut, Dr. Lyman was born into a Hartford family long noted for their mathematical and musical ability. He graduated from Yale in 1913; then enrolled at M.I.T. as a sanitary engineer, leaving before graduation to join a Red Cross typhus unit in Yugoslavia. He entered Johns Hopkins University School of Medicine in 1915, withdrew at the end of his second year to enlist in the Army Air Corps. Two years later he returned to medical school, earning both Phi Beta Kappa and Alpha Omega Alpha keys and graduating in 1921. He interned at Henry Phipps Psychiatric Clinic, then continued training at Brouwer's clinic in Amsterdam and at Queens Square Hospital in London as a clerk of Gordon Holmes.

Returning to this country, Dr. Lyman was appointed the first Associate Professor of Medicine at the newly organized medical school in Rochester, New York. In 1930, he attended Speilmeyer's clinic in Munich. A polyglot who spoke Russian and German without an American accent, Dr. Lyman was also one of the few Americans to have been an associate of Pavlov, at the Institute of Experimental Medicine in Leningrad, He then served at the Red Cross Hospital in Shanghai during the Sino-Japanese War of the early 1930's. During the next 5 years, as Associate Professor of Neurology and ·Psychiatry at Peking Union Medical School, Dr. Lyman established the first modern psychiatric hospital under the auspices of the college; developed the first tests for aphasia in Chinese; and compiled the first treatise on ethnologic neurology and psychiatry (Peking: Henri Vetch, 1939). Many of his important contributions, including

negation of Pitres' "law of regression," were published in the Chinese Medical Journal.

On returning to the United States in 1937, he was appointed Lecturer at Johns Hopkins University School of Medicine, where he collaborated with Dandy on the use of the EEG as a diagnostic aid in locating brain tumors, and penned the first paper on eye movements and the EEG. Dr. Lyman maintained a close association with Adolf Meyer; but did not wish to succeed him as Henry Phipps Professor of Psychiatry, considering himself far too individualistic.

Finally in 1940 he accepted the post of first Professor of Neuropsychiatry and Chairman of that Department at Duke University School of Medicine, the first professor of neuropsychiatry in North Carolina. His department was subsidized out of his own pocket to finance noted guest lecturers from all over the world as part of his residency training program. Dr. Lyman purchased the Scholz neuropathological collection and gave it to the Armed Forces Institute of Pathology via Webb Haymaker.

He took a leave of absence from Duke to serve in Washington, D. C.; Ceylon; and China as a major in the Office of Strategic Services. Many of his experiences were later compiled as a section in Assessment of Men (Rinehart, 1948)—the selection of highly qualified personnel for O.S.S.

After resigning from Duke in 1951, Dr. Lyman became Visiting Professor of Neuropsychiatry at Meharry Medical College in Nashville to spearhead the foundations for a department. Following his retirement in 1955, he moved to Montelair.

For many years Dr. Lyman was a con-

¹ Pitres assumed that the earliest learned or the most fluent language was alwars the one least affected or first to recover in aphasia. However, Lyman was able to demonstrate that language structure itself is a more crucial factor—those languages allowing better onnections with intact auditory and motor-speech functions showing less impairment

sultant and advisor in the Veterans Administration teaching program. Among the many organizations to which he had belonged were the American Psychiatric Association, American Neurological Association, Chinese Physiological Society, and Sigma Xi. He was certified in both neurology and psychiatry by the American Board.

An expert craftsman who turned out detailed brain models in colored plastic to supplement his teaching, Dr. Lyman was one of the first psychiatrists in this country to compile a library of coordinated tape recordings and movies or film strips of important teaching cases, both in neurology and psychiatry, beginning in the 1930's. This is one of the most extraordinary and complete libraries of its kind. His perfect pitch enabled him to analyse tape recordings of the most subtle deviations with aphasic patients.

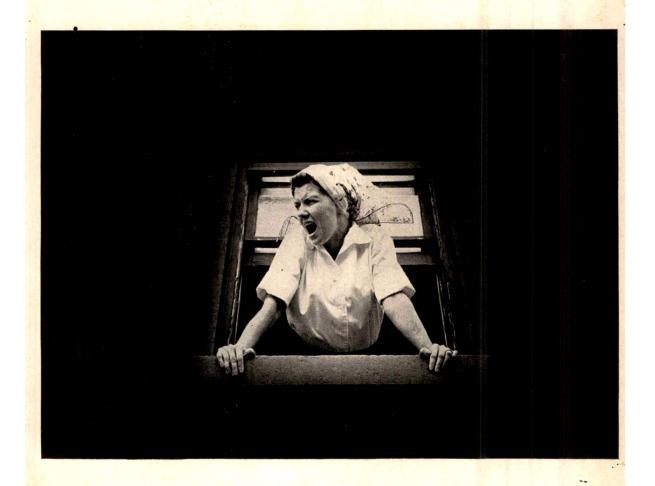
Unfortunately, due to modesty, his many other accomplishments were little known outside of a relatively few individuals, among whom are Tracy Putnam, H. Houston Meritt, John F. Fulton, Webb Haymaker, David McK. Rioch, Daniel Blain, William Sargent, R. Burke Suitt, and Leo Alexander (who was one of those Dr. Lyman "brought over" to this country). He is survived by his wife, Mrs. Katharine R. Lyman, who also served in O.S.S.; a daughter and son by a first marriage; and three sisters.

Of greatest importance in the present climate of doctrinaire putative certainties and conformity was Dr. Lyman's unique philosophy of teaching, original thinking, respect for individuality, and ability to empathize with patients that he tried to pass on to his students.

Perhaps the late Alan Gregg summarized these qualites in a letter to Dr. Lyman: "... You have a gift of stimulating and securing the loyalty of young men that is very valuable indeed."

LEONARD J. RAVITZ, M.D.

# To relieve anxiety...especially when agitation is the dominant feature



### Thorazine®, a fundamental drug in

brand of chlorpromazine

**psychiatry**—The action of 'Thorazine' has a distinctive sedative component, calming agitated patients without impairing mental acuity. Overactive, hostile symptomatology can be rapidly overcome, promoting receptiveness to therapy and better adjustment to social demands.

SMITH KLINE & FRENÇH 90% of anxious, agitated and apathetic office patients calmed without drowsiness and with normal drive restored...

on one or two 0.25 mg. tablets b.i.d.:

This is the pattern of performance for

# PERMITIL

Fluphenazine dihydrochloride

#### In Anxiety and Anxiety-induced Depression

"In contrast to other phenothiazines, it [PERMITIL] mitigates apathy, indifference, inertia and anxiety-induced fatigue. Thus, instead of impeding effective performance of daily tasks, it increases efficiency by facilitating psychic relaxation. Consequently, acceptance of this drug, especially by office patients, has been excellent." 1

- In 608 patients with anxiety and anxiety-induced fatigue or depression, Permitil, administered in small daily doses of 0.5 mg. to 1 mg., produced significant improvement in 90%.²
- PERMITIL is virtually free from side effects at recommended dosage levels.
- Patients become calm without being drowsy and normal drive is restored.
- Onset of action is rapid; effect is prolonged.
- Permitil does not potentiate barbiturates or non-barbiturate sedatives and can be used with impunity with such agents.

How to prescribe Permitic: The lowest dose of Permitic that will produce the desired clinical effect should be used. The recommended dose for most adults is one 0.25 mg. tablet twice a day (taken morning and afternoon). Increase to two 0.25 mg. tablets twice a day if required. Total daily dosage in excess of 1 mg. should be employed only in patients with relatively severe symptoms which are uncontrolled at lower dosage. In such patients, the total daily dose may be increased to a maximum of 2 mg., given in divided amounts. Complete information concerning the use of Permitic is available on request.

SUPPLIED: Tablets, 0.25 mg., bottles of 50 and 500.

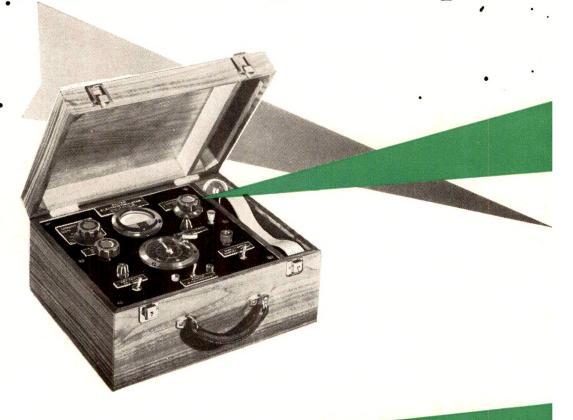
REFERENCES: 1. Ayd, F. J., Jr.: Current Therapeutic Research 1:41 (Oct.) 1959.

2. Recent compilation of case reports received by the Medical Department, White Laboratories, Inc.



# PERMITIL

### faster therapeutic response



#### REITER MODEL SOS PROVIDES FOR ALL THE FOLLOWING TECHNIQUES:

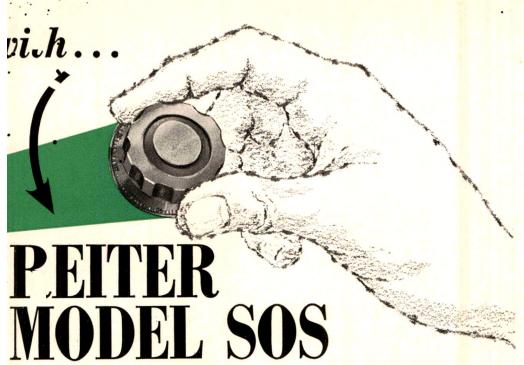
CONVULSIVE THERAPY (maximum convulsive and therapeutic efficiency) • NON-CONVULSIVE THERAPIES • ELECTRO-SLEEP THERAPY • FOCAL TREATMENT (unilateral and bilateral) • MONO-POLAR TREATMENT (non-convulsive or convulsive) • BAR-BITURATE COMA (and other respiratory problems) • MILD SEDAC (without sedation) DEEP SEDAC THERAPY (with sedation) • PRE-CONVULSIVE SEDAC (for anxious patients who resist EST) • POST-CONVULSIVE SEDAC (for deep sleep) • NEURO-LOGICAL CONDITIONS • MEASUREMENT PROCEDURES

Model SOS contains the Reiter unidirectional currents and three SedAc ranges as part of the single selector control. Other models available are:

1. Model S containing only the unidirectional currents; 2. SedAc (attachment) to be used with Model S; 3. SedAc (self-powered) an independent instrument.

Visit booths 94 and 95 at the APA meeting.

REUBEN REITER, Sc.D.



the one instrument combining the strongest convulsive currents with powerful yet gentle sedative currents

#### A SINGLE CALIBRATED KNOB CONTROLS ENTIRE TREATMENT

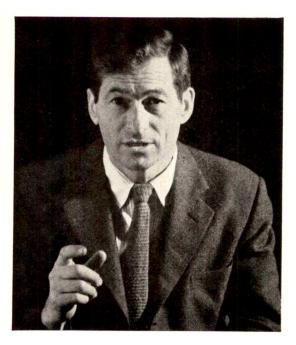
- · exceptionally fast clinical therapeutic response
- most efficient convulsive currents result in minimal side effects apnea, thrust, confusion and treatment-generated anxiety are negligible
- · patients are quickly clear and bright following treatment
- difficult cases have responded to SedAc deep sleep therapy powerful, deep, effective yet safe treatments are easily applied
- SedAc current establishes better transference patients become communicative
- anxious aversion to EST minimized by gentle SedAc current
- one-knob, with safety lock, controls convulsive and sedative currents
- multiple units used in many hospitals for simultaneous deep sleep treatments — with same doctor-nurse team required for one machine
- clinical studies have evaluated a new measurement procedure to determine areas of cerebral damage and the degree of malfunction

Only Reiter, the original unidirectional current electrostimulators, are authentically backed by extensive clinical experience with over 200 references in literature and text-books.

64 WEST 48th STREET, NEW YORK 36, N. Y.









#### now helps you reach the depressed patient

NIAMID helps you establish rapport with many depressed patients, increases their willingness to continue psychotherapy, and frequently decreases the need for ECT.

Gradually, gently, NIAMID makes some patients more accessible within a few days, but most patients require at least two weeks before response appears.

NIAMID is exceptionally well tolerated. More than 500,000 prescriptions have been written . . . more than 90 papers have been published.

NIAMID is supplied as 25 and 100 mg. scored tablets. A Professional Information Booklet is available on request from the Medical Department, Pfizer Laboratories, Div., Chas. Pfizer & Co., Inc., Brooklyn 6, New York.

### 

#### THE FIRST FIVE MINUTES

A Sample of Microscopic Interview Analysis

ROBERT E. PITTENGER, M.D., Director of Research and of Psychiatric Services, George Jr. Republic

CHARLES F. HOCKETT, Ph.D., Professor of Linguistics and Anthropology, Cornell University

JOHN J. DANEHY, M.D., Assistant Professor of Psychiatry, State Univ. of N. Y., Upstate Medical Center

#### Close Analysis . . .

At the heart of the book is a section of about 120 pages with an unusual format: Each page is cut horizontally into an upper part and a lower part, "Dutch door" style, so that the two parts can be turned independently. This device is for the reader's convenience. He will frequently want to make cross-reference from the material printed below to that printed above.

On the upper parts appears what the writers call a transcription of the five minutes of interview with which they deal. Directly below the transcription, but also on the upper page-parts, appears a transcript of what the participants in the interview say: that is, just what a stenographer would produce, in ordinary English spelling. The transcription represents all those audible items that ordinary English spelling omits: the pronunciation of the successive words, the intonation, the location and duration of pauses, hems and haws, sighs, gasps, coughs and throat-clearings, and such variables as rate of speech, register, volume, and tone-quality. The symbols and conventions of the transcription are explained in a separate chapter.

On the lower page-parts appears the authors' analysis of what is going on during the interview.

#### One reader's comments . . .

"It takes hours to read *The First Five Minutes;* but the student will find it rewarding in every way in which a highly technical, scientific book can be rewarding. It will open up new vistas for his imagination; and it will give him new techniques with which to reexamine his preconceptions. It will challenge him to explore the vistas, to apply the new techniques to his own field, and also to improve them. . . . "

LAWRENCE S. KUBIE, M.D., Director of Training, The Sheppard Pratt Hospital

May, 1960

About 210 pages

\$6.50

Order from PAUL MARTINEAU, Publisher

Box 421, Ithaca, New York



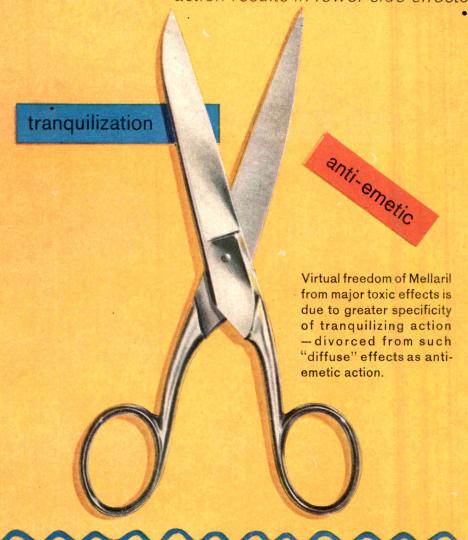
how does Mellaril differ from other potent tranquilizers?

# Melarii THIORIDAZINE HCI Specific, effective tranquilizer

provides highly effective tranquilization, relieves anxiety, tension, nervousness,

but is virtually free of such toxic effects as jaundice

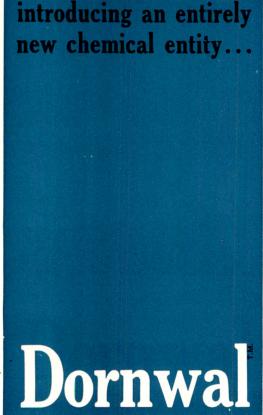
Parkinsonism blood dyscrasia dermatitis greater specificity of tranquilizing action results in fewer side effects



"Thioridazine [Mellaril] is as effective as the best available phenothiazine, but with appreciably less toxic effects than those demonstrated with other phenothiazines.... This drug appears to represent a major addition to the safe and effective treatment of a wide range of psychological disturbances seen daily in the clinics or by the general practitioner."\*

SANDOZ

Supply: MELLARIL Tablets, 10 mg., 25 mg., 100 mg.



# chemical name: 1-m-aminophenyl-2-pyridone generic name: amphenidone

with selective action on the central nervous system at both the cerebral and cord levels.

# for the treatment of anxiety & tension without causing drowsiness

Dornwal is regarded as a tranquilizer best suited for ambulatory patients.

- does not produce depression or depersonalization
- · relieves acute emotional upsets
- · relieves tension without undue stimulation
- · effectively interrupts tension headaches
- · is virtually devoid of sedative activity

Dornwal has proved to be relatively free from side effects when administered at recommended dosage. In 593 patients the incidence of drowsiness was less than 2 per cent — statistically not significant.

Prescribe Dornwal for your next patient who needs a tranquilizer but cannot afford to be drowsy. Write for your trial supply.

Indications: anxiety and tension, various types of psychoneuroses, menopausal syndrome, tension headache, alcoholism, premenstrual tension, behavior problems in children.

**Dosage:** One or two 200 mg. tablets three times a day. Children, one or two 100 mg. tablets two times a day. Administration limited to three months duration.

**Supplied:** 200 mg. yellow scored tablets, and 100 mg. pink tablets, each in bottles of 100 and 500.



Maltbie Laboratories Division Wallace & Tiernan Incorporated Belleville 9, New Jersey

# once a day dosage for the psychiatric patient



Prolixin is a new, exceptionally effective behavior modifier with sustained and prolonged action for your psychiatric patients. Its extended action, permitting a single daily dose, has been thoroughly demonstrated in clinical trials.<sup>1,2</sup>

Prolixin is particularly useful in the management of acute and chronic psychotic states characterized by agitation, excitement, explosive behavior and turbulence — in such conditions as schizophrenia, mania, psychoses due to organic brain disease, and senile psychoses.

Providing lowered toxicity and maximum economy, Prolixin not only elicits a greater therapeutic response but also affords improvement in many patients previously refractory to other phenothiazines. This is true whether the mental disorder is of short or long duration.

The usual extrapyramidal symptoms encountered with other potent phenothiazine derivatives have been reported. Less common effects have been hypotension, drowsiness, agitation, restlessness, and anorexia. Side effects have disappeared with reduced dosage or temporary discontinuance of the drug. The same statement of the drug. Side effects have disappeared with reduced dosage or temporary discontinuance of the drug.

Dosage: Optimum dosage levels vary from patient to patient and must be determined individually. Most patients may be maintained on 1 mg. – 5 mg. daily, Supply: 1.0 mg., 2.5 mg., and 5 mg. tablets. References: 1. Taylor, I.J.: Clin. Res. Notes 2:1 (Aug.) 1959. 2. Morrow, L.L.: Clin. Res. Notes 2:8 (Aug.) 1959. 3. Darling, H.F.: Dis. Nerv. System 20:167 (April) 1959. 4. Niswander, G.D., and Karacan, I.: Dis. Nerv. System (In Press). 5. Freed, J.E.: Clin. Res. Notes 2:12 (Aug.) 1959., 6. Weiss, I.I.: Clin. Res. Notes 2:12 (Aug.) 1959. 7. Stevenson, L.E.: Clin. Res. Notes 2:10 (Aug.) 1959.



#### SQUIBB

Squibb Quality the Priceless Ingredient

# WHEN PARKINSONISM COMPLICATES PHENOTHIAZINE THERAPY

emors, rigidity, cramps, and spasm due to eatment with potent phenothiazines are asily alleviated with COGENTIN," even in any cases when other drugs have failed. GENTIN is a most powerful antispasmodic, its long, cumulative action is unusually cll tolerated. By controlling parkinsonism dother extrapyramidal symptoms, COGENTIN ually enables the physician to continue the ll benefits of phenothiazine management.

tailed directions for the use of Cocentin, includg dosage and routes of administration, are ailable to physicians on request.

W DOSE FORM: INJECTION COGENTIN, 1 mg. per ., ampuls of 2 cc. Also available: Tablets Cogentin uarterscored), 2 mg., bottles of 100 and 1000.

Ayd, F. J.: Clin. Med. <u>6</u>:387, 1959. 2. May, R. H.: n. J. Psychiat. <u>116</u>:360, 1959. 3. Brock, S. loderator): Bull. New York Acad. Med. 32:202, 1956.

GENTIN is a trademark of Merck & Co., Inc.

MERCK SHARP & DOHME
Division of Merck & Co., Inc., West Point, Pa.

# COGENTIN

ETHANESULFONATE (BENZTROPINE METHANESULFONATE)

# helping you keep control of the patient during psychotherapy

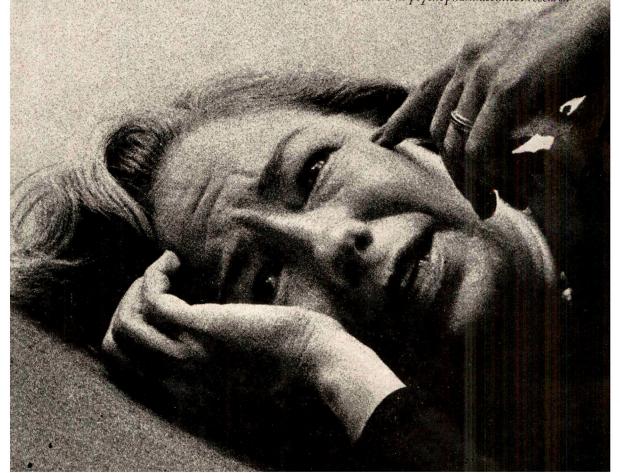
Compazine Brand of prochlorperazine

In the psychiatric management of anxiety, 'Compazine' tends to normalize emotional responses and often displays an alerting effect. Both actions are major aids in maintaining the patient's cooperation with your psychotherapeutic program.

Wilcox¹ affirmed that 'Compazine' "paved the way for the therapist to keep control of the patient" and helped the patient "to cope with situational problems and to compensate for handicaps' during the course of therapy.

1. Wilcox, F.: Prochlorperazine in Hospitalized and Private Psychiatric Patients, Dis. Nerv. System 19:118 (Mar.) 1958.

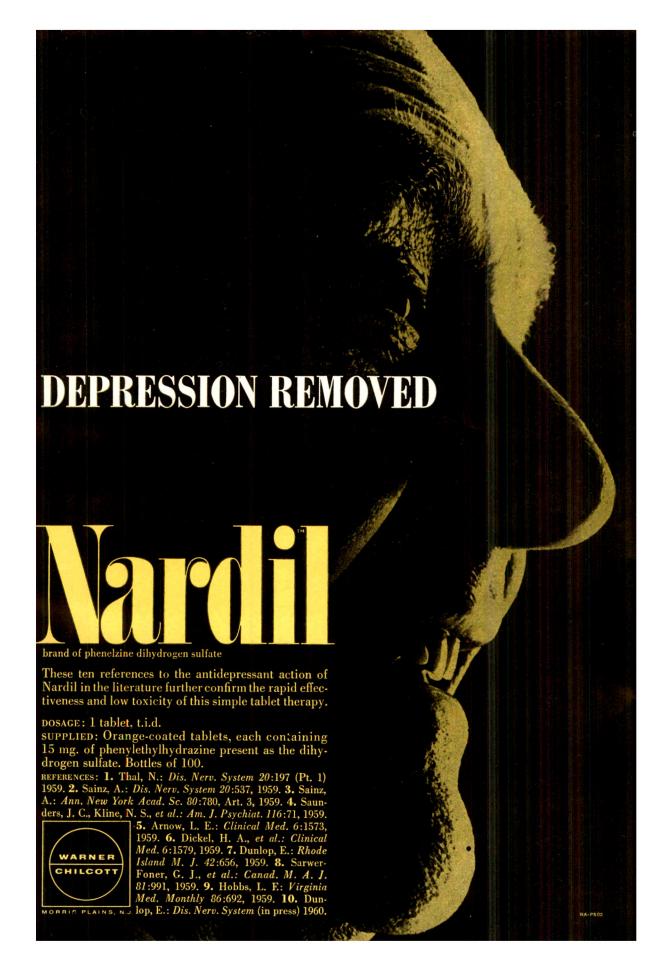
Smith Kline & French Laboratories · leaders in psychopharmaceutical research

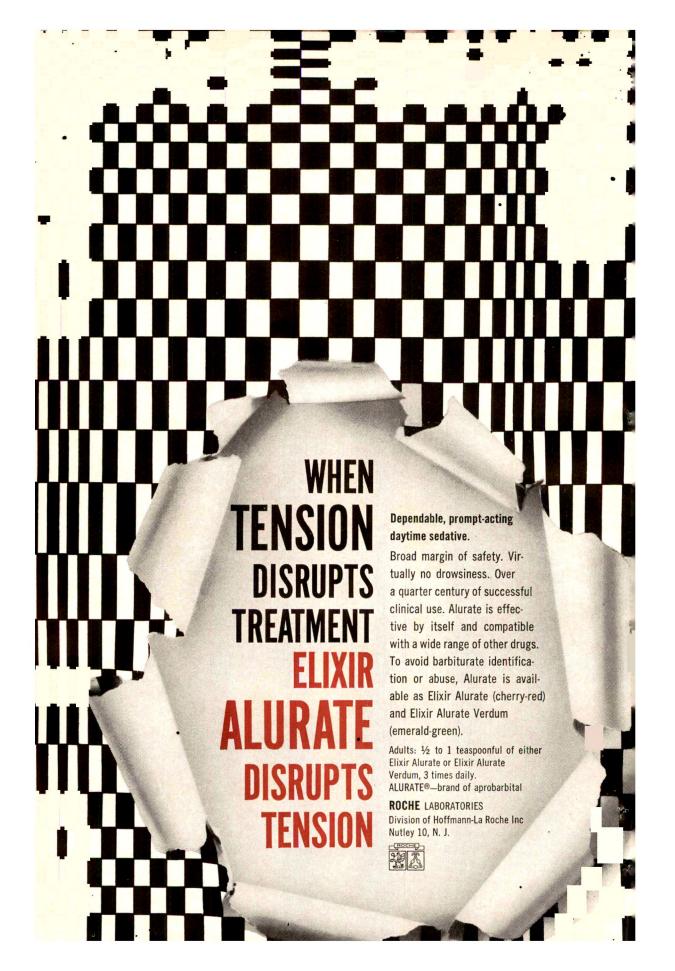


The onset of antidepressant activity is very rapid...."
"Improvement is progressive...." "...eighty per cent of patients were discharged...as recovered..."

'It is our opinion that the drug is suitable for both..." ambulatory or hospitalized depressed patients.

corrective—removes the depression and depression-induced anxiety, rather than merely masking the symptoms as do tranquilizers, CNS stimulants or sedatives. <sup>1-10</sup> rapidly effective—unlike many similar drugs, Nardil's antidepressant response is often seen within a week; complete remission usually within 2 to 6 weeks, in 4 out of 5 patients. <sup>1-10</sup> safe—low dosage and preferential distribution to the brain account for the minimal incidence of toxicity in over 400,000 patients to date, and confirm Nardil's excellent safety record.



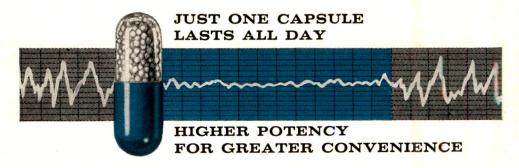


#### NEW AND EXCLUSIVE

# FOR SUSTAINED : TRANQUILIZATION

MILTOWN\* (*meprobamate*) now available in 400 mg. continuous release capsules as

## Meprospan-400



- relieves *both* mental and muscular tension without causing depression
- does not impair mental efficiency, motor control, or normal behavior

Usual dosage: One capsule at breakfast, one capsule with evening meal

Available: Meprospan-400, each blue capsule contains

400 mg. Miltown (meprobamate)

Meprospan-200, each yellow capsule contains

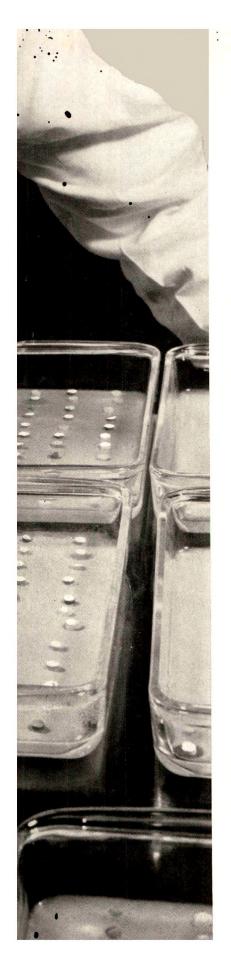
200 mg. Miltown (meprobamate)

Both potencies in vottles of 30.

**W**WALLACE LABORATORIES, New Brunswick, N. J.

CME-8427





# Failure is the first step

For almost every Wyeth product that today serves medicine, hundreds of compounds have been prepared, screened, investigated, and rejected by Wyeth scientists long before clinical studies were remotely considered. Of all the would-be antibiotics undergoing preliminary screening here, for example, the chances are slim that even one will successfully pass every test.

In pharmaceutical research—as in every branch of scientific endeavor—failure is expected.

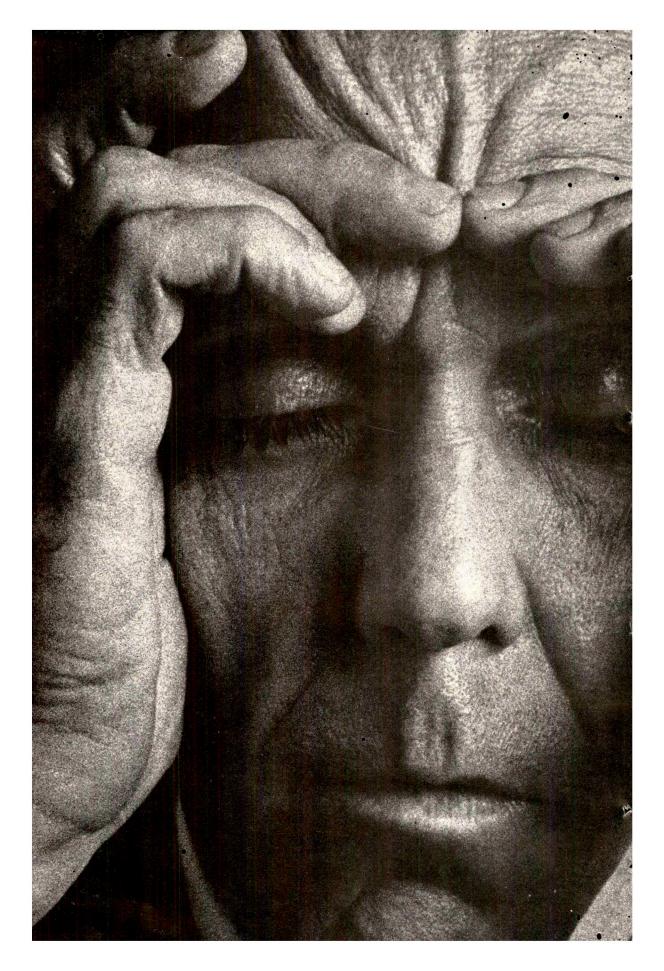
Nature guards her secrets zealously.

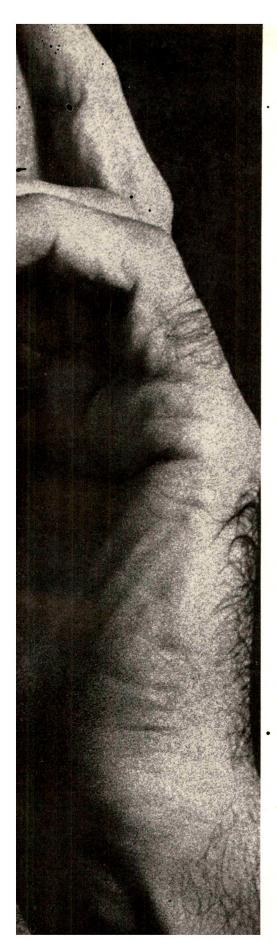
If, however, failure is often inevitable, it is also often the price of knowledge and progress. The compound that cannot meet the rigorous demands made of it by Wyeth may still indicate the direction research should take—or not take.

Whether research succeeds or fails, it is always costly in time, money, and effort. But Wyeth deeply appreciates the important role that research plays in strengthening the physician's hand... the role it plays in helping him provide the best medical care in the world.

Wyeth Laboratories Philadelphia 1, Pa.







in private practice

### Stelazine®

brand of trifluoperazine

is an effective adjunct

in the treatment of

chronic anxiety

A psychiatrist once said: If you can reach them and hold them, you can remit them.

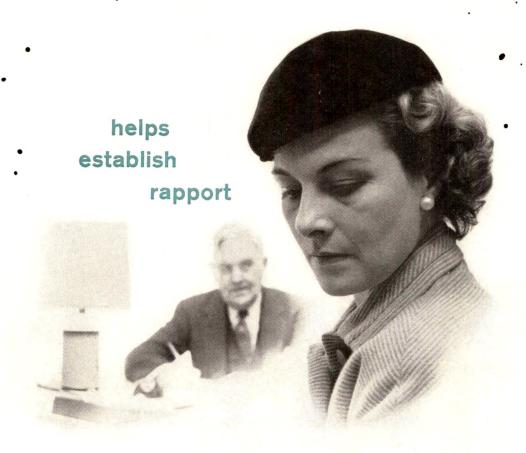
'Stelazine' can help you to reach, hold and bring to remission patients suffering from chronic anxiety.

'Stelazine' is particularly effective when anxiety is expressed as apathy, listlessness and loss of drive. As 'Stelazine' works to penetrate these defense mechanisms, patients become more capable of responding to psychotherapy and counselling.

On 'Stelazine', most patients promptly experience relief of anxiety and a subsequent restoration of drive and improved mental outlook.

See MD USA in color on the March of Medicine, Fri., May 27, NBC-TV (see your newspaper for time and channel)





### with the difficult patient

PROZINE is an effective aid for the symptomatic control of (1) apprehension and agitation, especially as manifested by somatic complaints and (2) motor excitability. Such control is often advantageous where these symptoms hinder rapport and, consequently, definitive therapy. According to Ehrmantraut ef al., PROZINE administered to adolescents. . . proved most effective in securing the cooperation of the more unmanageable patients."

Dosage requirements for Prozine are usually low, thus minimizing the possibility of side-effects that might interfere with therapy.

Wyeth Laboratories Philadelphia 1, Pa.

1. Oswald, W.J.: Int. Rec. Med. 172:743 (Dec.) 1959. 2. Ehrmantraut, W., et al.: Scientific Exhibit, District of Columbia Medical Society (Nov. 24) 1958, Washington, D.C.

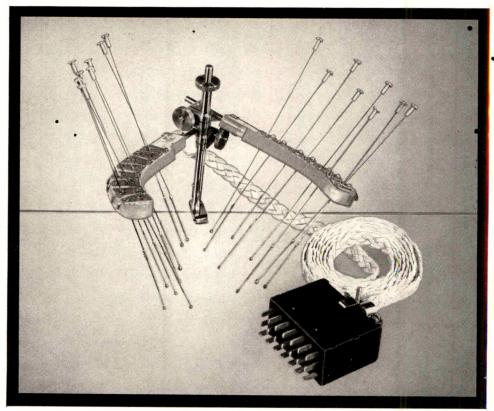
#### For Neurosis or Psychoneurosis



meprobamate and promazine hydrochloride, Wyeth

A Century of Service to Medicine

For further information on prescribing and administering PROZINE see descriptive literature, available on request.



# FOR FLEXIBLE INSTRUMENTATION IN CORTICOGRAPHY

Write for descriptive literature and prices on:
ELECTROMYOGRAPHS ELECTROENCEPHALOGRAPHS STRAIN GAGE AMPLIFIERS RECORDER PAPER ELECTRODES SHOCK THERAPY EQUIPMENT

- Completely universal and extendable arms and electrodes
- Up to 20 electrodes
- Easily removable individual electrode assemblies
- Fully autoclavable
- Spring mounted spherical silver electrodes

#### MEDCRAFT ELECTRONIC CORP.

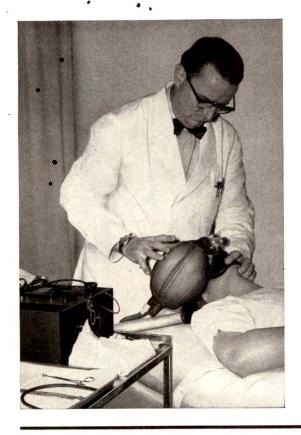


designers and manufacturers of diagnostic and therapeutic equipment for the medical profession

426 GREAT EAST NECK ROAD, BABYLON, N.Y.

TEL. MOHAWK 9-2837

ADDRESS MAIL TO BOX 1006, BABYLON, N.Y.



for the breath
of life in
electroshock therapy
...the AMBU\*
resuscitation and
suction kit

- Hand operated Resuscitator for safe, efficient ventilation—with room air or oxygen
- Foot operated suction pump for safe aspiration of the airway
- No electricity required

Write for descriptive folder to Air-Shields, Inc., Hatboro, Pa.



Hatboro, Pa.

\*Trademark

# DIAGNOSIS • TRAINING • TREATMENT for the Mentally Retarded Child

#### SIX COMPREHENSIVE PROGRAMS:

- Observation and Diagnosis
- Education and Training
- Residential Supervision

- Custodial Care
- Summer Program
- Psychiatric Treatment Center

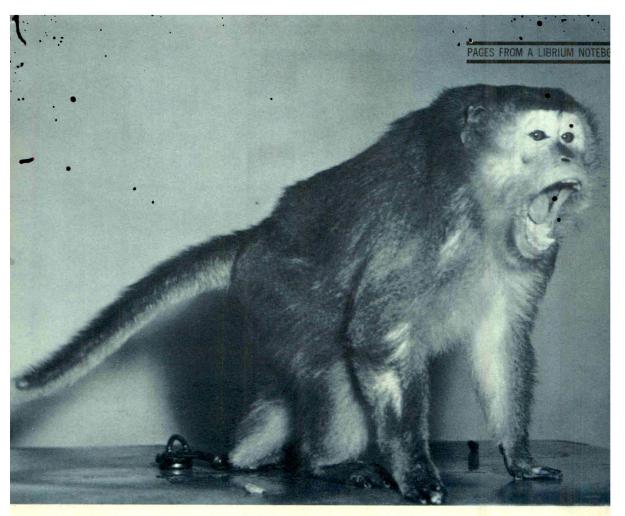
The Training School at Vineland, New Jersey is a private non-profit residential center for the care and treatment of mentally retarded boys and girls two years and older with a mental potential of six years. Outstanding professional staff conducts electroencephalographic, and neurological examinations; individual psychiatric, physiological, and speech studies and therapies.

Self-help is stressed. The children are given formal classroom instruction and encouraged to develop practical habits, attitudes and work skills. The educational program aims at maximum development.

The children enjoy homelike surroundings in attractive cottages on a 1600-acre country estate. Facilities include a private hospital, school, lake, swimming pools and a working farm. The Training School Research Laboratory is famed for continuous study of causes, prevention and treatment of mental retardation. Established 1888. Full information will be furnished on request. Write: Registrar, Box N.



### THE TRAINING SCHOOL AT VINELAND, NEW JERSEY



Characteristically vicious macaque monkey becomes manageable and friendly on Librium. (Turn page for follow-up picture.)

In the few weeks since its introduction, Librium has met with overwhelming acclaim frought all parts of the medical profession. Internists, psychiatrists, cardiologists, gynecologist dermatologists and many other specialists, as well as tens of thousands of general pratitioners, are discovering that the therapeutic applicability of this remarkable new copound transcends that of any tranquilizer or group of tranquilizers.

On these pages are presented some pertinent pharmacologic and clinical data documenti

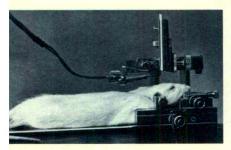
# NEW LIBRIUM

the successor to the tranquilizer:

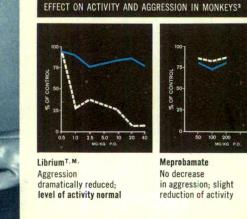
#### alming and taming effect of Librium on rats, monkeys and mice



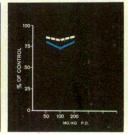
Im but alert, Librium-treated monkey offers striking conast to "doped-up" appearance observed with reserpine d phenothiazine derivatives.



ereotaxic instrument is used to locate septal area in rat ain. Anesthetized animal is trepanned; electrocautery stroys septal area; wound is closed with clamps.

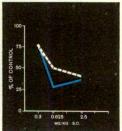


Librium T.M. Aggression dramatically reduced; level of activity normal



Legend:

Meprobamate No decrease in aggression; slight reduction of activity



activity aggression

Chlorpromazine Aggression reduced; precipitous decrease in activity



Rage reaction of septal rats is elicited by three tests: (1) blowing air on animal's back; (2) lifting tail with forceps; (3) prodding with stick. Untreated controls do not react to these tests.



Technician holds Librium-treated septal rat in bare hand-an act which would cost him a finger without the aid of Librium.

Mice fight each other furiously under stimulus of mild electric shock administered through bottom of cage. Libriumreated animals fail to show hostility.









# NEW LIBRIUM the successor to the tranquilizers

#### successor in scope

Librium covers the entire meprobamate range of therapy<sup>8,9</sup> plus a significant portion of the phenothiazine area<sup>9</sup> plus the difficult middle ground between the two.<sup>8</sup> Librium is effective in obsessive-compulsive neuroses which previously have defied drug treatment.<sup>3,4,7,8,17</sup> Librium has a profoundly beneficial effect on depression,<sup>3,6,11</sup> particularly the agitated type.<sup>1,7,9</sup>

#### successor in safety

Librium "... has been shown to have a margin of safety greater than meprobamate..."

Librium lacks the autonomic blocking effects of chlor-promazine and reserpine. Librium is devoid of phenothiazine toxicity; free of extrapyramidal complications; not encumbered by the depressions that often follow reserpine.

#### successor in effect

Librium, in addition to relieving anxiety, produces a feeling of well-being, increased drive and a broadening of interest. Librium appears the biggest step yet toward "a pure neuroleptic or 'easing' action totally distinct from a central sedative or hypnotic one."

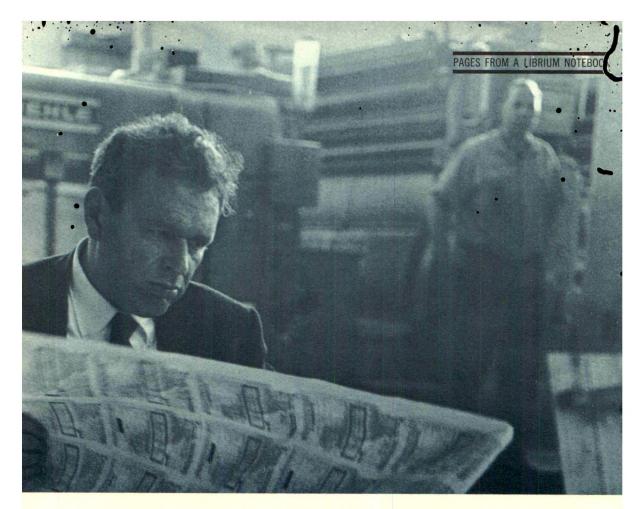
#### USES OF LIBRIUM

Librium is more than replacement therapy. It is not a substitute for, but quantitatively and qualitatively superior to, older tranquilizers and "equanimity-producing" drugs. Librium is of particular value:

in the office patient, troubled by anxiety and tension, and by the irritability, fatigue and nervous insomnia associated with tension states

in the office patient, where you suspect anxiety and tension as contributing or causative factors of organic or functional disorders

in more severely disturbed patients, including cases of agitated and reactive depression, fears, phobias, obsessions and compulsions ("...its spectrum of activity envelops and extends well beyond that of meprobamate and into certain indications for which the phenothiazines are prescribed"9).



#### the trouble-shooter who had troubles of his own

#### One of many published case reports on Librium

Deadlines kept staring him in the face, always drawing closer, at times missed altogether. The result: a continuous state of tension for this publishing house trouble-shooter, troubled by 18 years of recurring duodenal ulcers.

"At no time during these 18 years, in spite of rigid adherence to diet and antispasmodics, was he ever completely free of pain." 10

The ulcer pain struck with particular severity between meals. A variety of medicaments provided no real relief. On the contrary, during the past two years, his condition had actually worsened; now the pain also hit him night after night—without letup.

"Upon administration of Librium, 10 mg. b.i.d., the patient experienced dramatic relief with freedom from all abdominal pain, including nocturnal pain which he had had constantly for two years." 10

ROCHE LABORATORIES of Division of Hoffmann-La Roche Inc. Nutley 10, N. J.

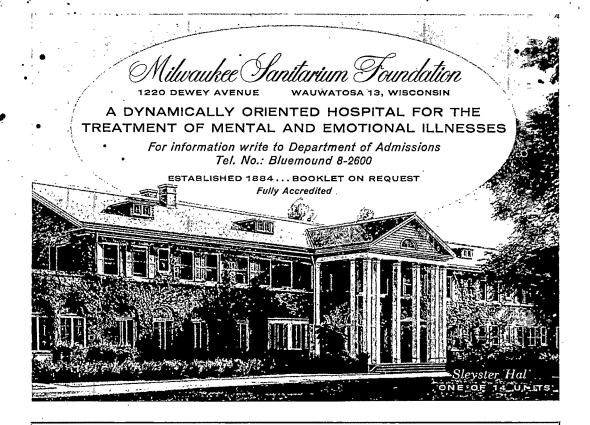


LIBRIUM<sup>T.M.</sup> Hydrochloride — 7-chloro-2-methylamino-5-phenyl-3H-1,4-benzodiazeoine 4-oxide hydrochloride Supplied: Capsules, 10 mg, green and black—bottles of 50 and 500.

For complete information on indications and recommended dosage, please consult product literature.

Published Reports on Librium: 1. T. H. Harris, Dis. Nerv. System, 21:(Suppl.), 3, 1960. 2. L. O. Randall, ibid., p. 7. 3. J. M. Tobin, I. F. Bird and D. E. Boyle, ibid., p. 11. 4. H. A. Bowes, ibid., p. 20. 5. J. Kinross-Wright, I. M. Cohen and J. A. Knight, ibid., p. 23. 6. H. H. Farb, ibid., p. 27. 7. C. Breitner, ibid., p. 31. 8. I. M. Cohen, Discussant, ibid., p. 35. 9. G. A. Constant, ibid., p. 37. 10. L. J. Thomas, ibid., p. 40. 11. R. C. V. Robinson, ibid., p. 43. 12. S. C. Kaim and I. N. Rosenstein, ibid., p. 46. 13. H. E. Ticktin and J. D. Schultz, ibid., p. 49. 14. J. N. Sussex, ibid., p. 53. 15. I. N. Rosenstein, ibid., p. 57. 16. D. C. English, Curr. Therap. Res., 2:88, 1960. 17. T. H. Harris, J.A.M.A., 172:1162, 1960.





### LOUDEN HALL

#### PRIVATE PSYCHIATRIC SANITARIUM

- Visiting psychiatrists may admit and treat their own patients on a daily or monthly basis.
- All facilities of adjacent Brunswick General Hospital, with which Louden Hall is now associated, are available for patient's care.
- Electro-Encephalography In-or-Out Patients.

Resident psychiatrists and specially trained personnel are on the staff, as formerly, for the care and treatment of the mentally ill.

#### THE BRUNSWICK HOSPITAL CENTER, INC.

366 BROADWAY, AMITYVILLE, L. I., N. Y.

Tel.: AMityville 4-0053 Tel.: MUrray Hill 3-7012



controls acute agitation, hostility, severe apprehension, hyperactivity reduces confusion, delusional reactions encourages cooperation

For further information on prescribing and administering Sparine see descriptive literature, available on request.

INJECTION

TABLETS

SVEIR

## Sparine Sparine

Promazine Hydrochloride, Wyeth

Wyeth Laboratories Philadelphia 1, Pa.







# ANCLOTE MANOR



### on the Gulf of Mexico

#### A MODERN HOSPITAL FOR INTENSIVE PSYCHIATRIC TREATMENT

Owned and Operated by The Anclote Manor Foundation—A Non-Profit Organization SAMUEL G. HIBBS, M.D. — PRESIDENT

Dynamically Oriented For: Individual Psychotherapy, Group Psychotherapy, Therapeutic Community, All Somatic Therapies • Large Staff Trained for Team Approach • Supervised Recreational Program

Consultants in Psychiatry

Medical Director Lorant Forizs, M.D. Clinical Director Walter H. Wellborn, Jr., M.D.

Director of Training
Pater J. Spoto, M.D.

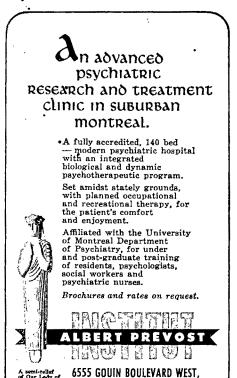
Samuel G. Hibbs, M.D. Samuel Warson, M.D. Zack Russ, M.D. Walter Bailey, M.D.

Arturo Gonzalez, M.D. Roger E. Phillips, M.D. Melvin Gardner, M.D. Martha McDonald, M.D.

Robert Steele, M.D.

#### TARPON SPRINGS, FLORIDA • VICTOR 2-1811

Approved by American Psychiatric Assn., Accredited by Joint Commission on Accreditation of Hospitals Member National Assn. of Private Psychiatric Hospitals, American Hospital Assn., Florida Hospital Assn.



#### ATTENTION

MONTREAL 9, CANADA.

Extension of the reduced subscription rate of \$5.00 (less than one-half the regular rate) for the AMERICAN JOURNAL OF PSY-CHIATRY has been authorized to include medical students; junior and senior internes; first, second, and third year residents in training; and graduate students in psychology, psychiatric nursing, and psychiatric social work.

In placing your order, please indicate, issue with which subscription is to start.

Send subscriptions to:

THE AMERICAN JOURNAL OF PSYCHIATRY

1270 Avenue of the Americas New York 20, New York

### Current knowledge and therapeutic advances in . .

#### Schizophrenia

An Integrated Approach

Edited by ALFRED AUERBACK, University of California School of Medicine. With 15 Contributors

Sponsored by the American Psychiatra Association, this important book provides an authoritative survey of the progress made within the past few years in the treatment of schizophatnia. It integrates the research findings of psychiatrists with those of anthropologists, ethnologists, and sociologists in the fields of communication and intrafamily relationships. The book covers latest psychotherapeutic techniques. It reviews Russian developments in neurophysiology; outlines current biochemical studies on the psychotoxic bloud fraction, taraxein; and appraises the narcoleptic drugs used in the treatment of schizophrenia. 1957. Illus., 224 pp. \$5.50

#### **Adolescent Aggression**

A Study of the Influence of Child-Tra ning Practices and Family Interrelationsh ps

ALBERT BANDURA, Stanford University: and RICHARD H. WALTERS, University of Toronto

This revealing study examines the influence of child-training practices and family intermationships that lead to the development of antisocial, aggressive behavior in adolescent boys. Treating such character distortions as a failure in socialization, the book provides fresh insight into the origin and expression of aggressive attitudes and the very process of socialization itself. Based on interviews and projective tests of adolescent boys and their parents, the book includes interview schedules, rating scales, and thematic deviation tests. A volume in A Psychology Series existed by J. McV. Hunt. 1959. 72 ills., tables: 475 pp. \$7.50

# Interpersonal Diagnosis of Personality

### A Functional Theory and Methodology for Personality Evaluation

TIMOTHY LEARY, Kaiser Foundation Hospital

Pioneering work develops an objective, multilevel system of personality diagnosis based on interpersonal, social behavior rather than symptomatic or pathological behavior. It presents an original personality theory, a series of complex techniques for measuring interpersonal expression at different personality levels, and an en-pirical method for applying theory and technique at the clinical level. "Outstanding." — Contemporary Psychology. 1957. 120 i.ls., tables; 518 pp. \$12

THE RONALD PRESS COMPAINY
15 East 26th St., New York 10.



#### The Children's Service -

ROBERT E.
SWITZER, M.D.
DIRECTOR

Outpatient consultation, evaluation and treatment for infants and children of grade school to 18. Residential treatment for elementary grade children with emotional and behavior problems.

### The Menninger Clinic

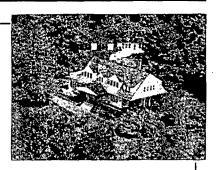
TOPEKA, KANSAS

#### THE BRETT SCHOOL

#### DINGMANS FERRY, PENNSYLVANIA

In the Footbills of the Poconos

Intensive, highly individualized personal training for a small group of girls over five years of age. Carefully chosen staff. Special modern teaching techniques and program of therapeutic education. Varied handicrafts, cooking, nature study and field trips. Outdoor games, picnics and other activities. Comfortable, homelike atmosphere. Close cooperation with family physician. 70 miles from New York City.



Directors Frances M. King, formerly Director of the Seguin School References
Catherine Allen Brett, M.A. Telephone Dingmans Ferry 8138

#### HALL-BROOKE HOSPITAL

An Active Treatment Hospital, located one hour from New York

Accredited by: The Central Inspection Board of the American Psychiatric Association The Joint Commission on Accreditation of Hospitals

#### HALL BROOKE, GREENS FARMS, BOX 31, CONN.

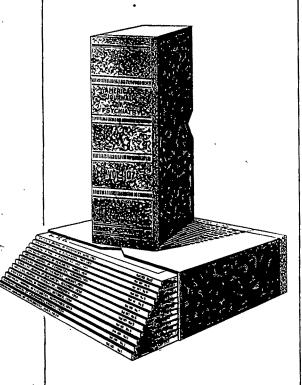
Telephone: WESTPORT CAPITAL 7-1251

George S. Hughes, M.D. Leo H. Berman, M.D. Albert M. Moss, M.D. Louis J. Micheels, M.D. Robert Isenman, M.D. John D. Marshall, Jr., M.D. Edward M. Keelan, M.D. Peter P. Barbara, Ph.D.

ENTER NEW SUBSCRIPTIONS AND	RENEWALS	ON THIS F	ORM
AMERICAN JOURNAL OF PSYCHIATRY 1270 Avenue of the Americas, Room 1817 New York 20, New York	•		19 Date
Enclosed herewith is \$ for one year's	subscription to	the AMERIC	AN JOURNAL
OF PSYCHIATRY beginning with Volume	Number		
NAME Print			• • • • • • • • • • • • • • • • • • • •
ADDRESS			
SIGNATURE			
Subscription \$12.00 a year or by the Volume. Fore America Postage \$.50 extra. New Volume began July	ign Postage \$1 1959 issue.	.00 extra. Ca	nada and South

Keep and protect
 your Journals in this new

**'VOLUME FILE CASE** 



# ATTRACTIVE INEXPENSIVE SERVICEABLE

Note new price: \$2.50 each: 3 for \$7.00

Please add 25 cents postage for each file ordered

ORDER DIRECT FROM

AMERICAN JOURNAL OF PSYCHIATRY 1270 Avenue of the Americas New York 20, N. Y.

WHEN ORDERING PLEASE SPECIFY VOLUME NUMBERS

new
modern
treatment
center for
psychiatric
patients

### GRACIE SQUARE HOSPITAL

welcomes the referring psychiatrist to active participation in patient care; provides intensive treatment programs coordinating all psychiatric therapies, designed to return the patient to a functioning capacity in society as quickly as possible.

#### unique advantages offered by Gracie Square Hospital...

all modern psychiatric techniques in addition to complete medical and surgical facilities twenty-four hour emergency admission service, including weekends

- 232 beds-centrally located in Manhattan
- o completely air conditioned-charming décor
- rehabilitative approaches to cases of addiction, alcoholism, and geriatric problems
- o qualified consultants in all specialties
- night- and day-care programs
- full-time resident staff and psychiatrically trained personnel

DIRECTOR

Leonard Cammer, M.D.

#### GRACIE SQUARE HOSPITAL

420 East 76th Street • New York 2!. N.Y. • YUkon 8-4400 Licensed by the New York State Department of Mental Hygiene. Participating Hostmal in N. J. Blue Cross Plan.

\*8510



### SANITARJUMS and PRIVATE HOSPITAL

#### BALDPATE, INC.

Geo. Fleetwood 2-2131

Georgetown, Mass.

Located in the hills of Essex County, 30 miles north of Boston

For the treatment of

psychoneuroses, personality disorders, psychoses, alcoholism and drug addiction.

Definitive psychotherapy, somatic therapies, pharmacotherapy, milieu-therapy under direction of trained occupational and recreational therapists.

HARRY C. SOLOMON, M.D. Consulting Psychiatrist

GEORGE M. SCHLOMER, M.D. Medical Director

#### THE EMORY JOHN BRADY HOSPITAL 401 SOUTHGATE ROAD, COLORADO SPRINGS, COLORADO

MElrose 4-8828

For the care and treatment of Psychiatric disorders.

Individual and Group Psychotherapy and Somatic Therapies.

Occupational, diversional and outdoor activities.

X-ray, Clinical Laboratory and Electroencephalography.

E. JAMES BRADY, M. D., Medical Director C. F. RICE, Superintendent

FRANCIS A. O'DONNELL, M. D. ROBERT W. DAVIS, M. D.

RICHARD L. CONDE, M. D.

H. C. Hobbs, Ph. D. Clinical Psychology

#### BRIGHAM HALL HOSPITAL CANANDAIGUA, NEW YORK

FOUNDED 1855

Individual psychotherapy, occupational and recreational programs, shock therapy, selected cases of alcoholism and addiction accepted.

Special consideration for Geriatric cases.

HOWARD W. BERG, M.D., Medical Director

#### CEDARCROFT SANITARIUM & HOSPITAL, INC. 12,101 COLUMBIA PIKE, SILVER SPRING, MD. MAfair 2-1200

Nine miles from Washington, D. C. - In rural Maryland

Dedicated to the Care of neuropsychiatric disorders requiring special supervision and guidance. Individual and group psychotherapy, occupational and activity therapy emphasized. All other accepted therapies are available.

H. E. Andren, M. D. Medical Director

Member of N. A. P. P. H.

Accredited by Joint Commission on Accreditation of Hospitals

#### **COMPTON SANITARIUM**

820 WEST COMPTON BOULEVARD

COMPTON, CALIFORNIA

IE 6-1185 - NE 1-1148

Member of American Hospital Association and National Association of Private Psychiatric Hospitals

High Standards of Psychiatric Treatment . . . . . Serving the Los Angeles Area

Fully Approved by Central Inspection Board of APA

Accredited by Joint Commission on Accreditation of Hospitals

G. CRESWELL BURNS, M.D.

Medical Director

HELEN RISLOW BURNS, M.D.

Assistant Medical Director

#### FAIR OAKS

Incorporated

#### SUMMIT, NEW JERSEY

A 70-BED MODERN, PSYCHIATRIC HOSPITAL FOR INTENSIVE TREATMENT AND MANAGEMENT OF PROBLEMS IN NEUROPSYCHIATRY

20 MILES FROM NEW YORK CITY

OSCAR ROZETT, M. D. Medical Director

TELEPHONE CRestview 7-0143
THOMAS P. PROUT, Jr.

Administrator

Established

### FALKIRK HOSPITAL CENTRAL VALLEY, N. Y.

1889

TELEPHONE: HIGHLAND MILLS, NEW YORK, WABASH 8-2256

Devoted to the individual care and treatment of psychiatric disorders. An active therapy program and diversified buildings permits classification of patients.

Located 2 miles north of Harriman Exit (No. 16) N. Y. State Thruway
50 miles from New York City

Member N.A.P.P.H.

Fully approved by Central Inspection Board of APA Accredited by Joint Commission on Accreditation of Hospitals

T. W. NEUMANN, JR., M. D. Director

CORNELIA B. WILBUR
Clinical Director

### THE HAVEN SANITARIUM INC. ROCHESTER, MICHIGAN

M. O. WOLFE, M.D. Director of Psychotherapy

RALPH S. GREEN, M.D. Clinical Director

GRAHAM SHINNICK

Manager

A psychoanalytically oriented hospital for the treatment of mental and emotional illnesses.

Telephone: OLive 1-9441

Phone: CHestnut 7-7346

#### WINDSOR HOSPITAL

A Non Profit Corporation

Established 1898

#### CHAGRIN FALLS, OHIO

A hospital for the treatment of Psychiatric Disorders, Booklet available on request.

John H. Nichols, M. D. Medical Director

G. PAULINE WELLS, R. N.

Administrative Director

HERBERT A. SIHLER,
Secretary

MEMBER: American Hospital Association - Central Neuropsychiatric Hospital

• Association - National Association of Private Psychiatric Hospitals

### CHESTNUT LODGE

DEXTER M. BULLARD, M.D., Medical Director MARVIN L. ADLAND, M.D., Clinical Director OTTO A. WILL, JR., M.D., Director of Psychotherapy DONALD L. BURNHAM, M.D., Director of Research

#### CLINICAL ADMINISTRATORS

MARTIN COOPERMAN, M.D.

JOHN L. CAMERON, M.D. JOHN P. FORT, JR., M.D.

ROBERT W. GIBSON, M.D. MICHAEL A. WOODBURY, M.D.

#### ASSOCIATES

CHARLES A. BAKER, M.D. CLAY F. BARRITT, M.D. MILTON G. HENDLICH, M.D. JOHN S. KAFKA, M.D. BERL D. MENDEL, M.D. CESAR MEZA, M.D. PING-NIE PAO, M.D.

CLARENCE G. SCHULZ, M.D. HAROLD F. SEARLES, M.D. JOSEPH H. SMITH, M.D. BARBARA S. SOKOLOFF, M.D. WILHELM P. STIERLIN, M.D. YVONNE VAN der REYDEN, M.D. NAOMI K. WENNER, M.D.

#### CLINICAL PSYCHOLOGIST

MARION I. HANDLON, Ph.D.

#### INTERNISTS

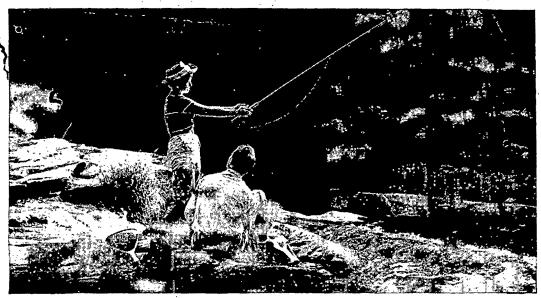
CORINNE COOPER, M.D.

GEORGE SHARPE, M.D.

#### ROCKVILLE

**MARYLAND** 

	ENTER NEW SUBSCRIPTIONS AND RENEWALS ON THIS FORM
	AMERICAN JOURNAL OF PSYCHIATRY 1270 AVENUE OF THE AMERICAS, ROOM 310 NEW YORK 20, NEW YORK  Date
.	Enclosed herewith is \$ for one year's subscription to the AMERICAN JOURNAL
	OF PSYCHIATRY beginning with Volume : Number
	NAME
	Print
	ADDRESS
	SIGNATURE
	Subscription \$12.00 a year or by the Volume. Foreign Postage \$1.00 extra. Canada and South
	America Postage \$.50 extra. New Volume began July 1959 issue.



DREAMS NEED SOME HELP. Saving with U.S. Savings Bonds is a good way to turn a dream into reality. The Payroll Savings Plan makes saving automatic.

# Let the Government Pay You for saving for something you want

An installment plan that pays you interest sounds surprising, doesn't it? That's what happens when you buy U.S. Savings Bonds. They now pay you  $3\frac{3}{4}\%$  compounded semi-annually when held to maturity. With this new rate, \$3 becomes \$4 fourteen months faster than before—in just 7 years, 9 months. Make your dreams come true, faster than ever, with U.S. Savings Bonds.

#### ADVANTAGES WORTH THINKING ABOUT

• You can save automatically with the Payroll Savings Plan • You now earn  $3\frac{3}{4}\%$  interest to maturity • You invest without risk under a U.S. Government guarantee • Your money can't be lost or stolen • You can get your money, with interest, anytime you want it • You save more than money—you help your Government pay for peace • Buy Bonds where you work or bank.

NOW every Savings Bond you own—old or new—earns ½% more than ever before.

You save more than money with U.S. Savings Bonds

The U.S. Government does not pay for this advertising. The Treasury Department thanks The Advertising Council and this magazine for their patriotic donation.



## IMPORTANT

We are in urgent need of obtaining the January, 1893 issue of the American Journal of Psychiatry (Volume 49 #3)

We will pay \$5 each for the first five copies received in this office.

Send to:

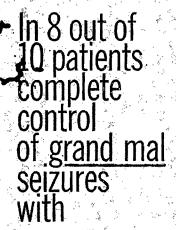
Austin M. Davies, Bus. Mgr.

American Journal of Psychiatry

1270 Avenue of the Americas, Rm. 1817, New York 20, New York



THE DARTMOUTH PRINTING CO. HANOVER, N. H., U.S.A.



# "MYSOLINE"

wide margin of safety

BRAND OF PRIMIDONE

Results in 262 epitentic nationts when "Mysoline" was used alone.

*	Results in 202 ephieptic patients when laysonne was used alone.				
COMPOSITE RESULTS	Seizure	Number of Patients	Completely Controlled	50-90% Improved	<b>&lt;</b> 50%
CLINICAL	Grand Mal Psychomotor Focal Jacksonian	214 29 19	172 (80%) 19 (65%) 19 (100%)	15 (7%)	27 (13%) 10 (35%)

Results in 835 epileptic patients who had failed to respond successfully to other anticonvulsants. "Mysoline" was added to current medication which, in some cases, was eventually replaced by "Mysoline" alone.

Type of Number of Seizure Patients		Completely Controlled	50-90% Improved	<50%	
Grand Mai Psychomotor Focal Jacksonian	130	175 (28.5%) 10 (7.7%) 14 (15.2%)	253 (41.2%) 65 (50%) 36 (39.1%)	185 (30.3%) 55 (42.3%) 42 (45.7%)	

The dramatic results obtained with "Mysoline" advocate its use as first choice of effective and safe therapy in the control of grand mal and psychomotor attacks. Literature and bibliography on request.

#### SPECIAL POTENCY NOW AVAILABLE

New 50 mg. small-dose tablet offers practical approach to dosage adjustment for initiation/combination/and "transfer" therapy in selected cases. Available on prescription.

Supplied: 0.25 Gm. (250 mg.) scored tablets, bottles of 100 and 1,000. Also 50 mg. scored tablets to facilitate dosage adjustment, bottles of 100 and 500.



AYERST LABORATORIES . New York 16, N.Y. . Mont@al, Canada

"Mysoline" is available in the United States by arrangement with Imperial Chemical Industries, Ltd.

Visit Booths 51 and 52 and the Devoux Scientific Exhibit at the Atlantic City Convention

#### COMPLETE PLAN

AT DEVEREUX SCHOOLS, multidisciplinary teams of rehal oriented psychiatrists, psychologists, social workers, teachers, and vocational rehabilitation specialists participate in assessment of the whole child and formulate plans for his treatment, education, and vocational training. Children are assigned to one of the many residential units or communities for milieu therapy, general and remedial education, vocational counseling and guidance, pre-vocational services, and vocational training.

#### CLINICAL STAFF

J. Clifford Scott, M.D. Edwin H. Abrahamsen, M.D. Aurelio Buonanno, M.D. Charles M. Campbell, Jr., M.D. Fred J. Culeman, M.D. Ruth E. Duffy, M.D. William F. Haines, M.D. Robert L. Hunt, M.D. Richard H. Lambert, M.D. Leonardo Magran, M.D. Joseph J. Peters, M.D. Alvis J. Scull, M.D. Jacob S. Sherson, M.D. Albert S. Terzian, M.D. Walter M. Uhler, M.D. Tirso L. Vinueza, M.D.

Lance Wright, M.D. F. Elisworth Henry, S.T.D. Milton Brutten, Ph.D. William J. Cohen, Ph.D. Dorothy E. Conrad, Ph.D. Sidney L. Copel, Ed.D. Michael B. Dunn, Ph.D. Shirley M. Jahnson, Ph.D. John R. Kleiser, Ph.D. Murray Levine, Ph.D. Henry Platt, Ph.D. Edgar A. Smith, Ed.D. George Spivack, Ph.D. Herbert A. Sprigle, Ph.D. Anne Howe, M.S. Kenneth E. Evans, B.S.

Psychoanalytic Consultants

G. Henry Kátz, M.D.

Herbert H. Herskovitz, M.D.

#### THE DEVEREUX FOUNDATION

A nonprofit organization Devon, Pennsylvania

Founded 1912

Santa Barbara, California

Victoria, Texas

TRAINING RESEARCH

**CAMPS** 

**SCHOOLS** 

COMMUNITIES

HELENA T. DEVEREUX Administrative Consultant

EDWARD L. FRENCH, Ph.D. Director

> WILLIAM B. LOEB \*reasurer

Professional inquires for Eastern Schools should be directed to Charles J. Fowler, Registrar, Devereux Schools, Devon, Pa.; for Pacific Coast Schools, to Keith A. Seaton, Registrar, Devereux Schools in California, Santa Barbara, Calif.; Southwestern residents address Devereux Schools in Texas, Box 336, Victoria, Tex.